

THE ILLUSTRATED LONDON NEWS

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With Special Supplement: "The Making of 'The Illustrated London News.'" | SIXPENCE.

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POSTED AT LLOYD'S AS MISSING: WRECKED AT SEA—I. BY TIDAL WAVE.

With this remarkable picture we begin a series of illustrations in which are shown causes which lead to the posting of ships as missing at Lloyd's—ways in which vessels go to their end in the waste of waters. It seems scarcely necessary to point out how

dangerous a thing a tidal wave may be, but it may be noted, perhaps, that only recently such a wave lifted a torpedo-boat ashore at Tokio, and carried barges and dredgers two thousand five hundred feet inland, depositing them in a main street.

DRAWN BY OUR SPECIAL ARTIST. NORMAN WILKINSON, R.I.

HARWICH ROUTE TO THE CONTINENT

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VANDALISM IN UPPER SYRIA.

(See Illustrations.)

NORTHERN SYRIA and Mesopotamia contain a number of fortified cities and castles which at one time and another played prominent parts in the world's history. From the times of the Hittites, through the invasion of Nebuchadnezzar, the Persian and Seleucid monarchies, the Roman occupation, down to the days of the Crusades and of Saladin, and so to Mehemet Ali, within the memory of men now living, they have been the objectives of armies or the capitals of kings. Among these places, the most notable are Aleppo; Urfa (or Edessa), Antioch, Harim, Shaizar, Berejik, Carchemish, Masyad, Membij (or Heliopolis), and Baalbek. It is hard to draw a line to the exclusion of other famous names. Tortosa of the Templars, famous as a mediæval shrine, the rival of the sacred sites of Palestine, is forgotten as the seat of an important monarchy which was old before the building of Tyre, but is perhaps remembered as the last fortress held by the Crusaders in Syria. Kalat el Hosn, the great castle of the Hospitallers, Crac des Chevaliers, is perhaps the finest monument of the Crusades, unless el Merkhah claim that honour.

Some of the more important of these, Aleppo for instance, or Urfa, were admirable examples of the military architecture of different ages, Urfa having walls of Byzantine construction, repaired and added to by Armenians, Latins, the Kipchak Atabegs of Aleppo and Mosul, the Kurdish Ayyubids, and even the Ottoman Turks. Its castle, the scene of some of the most romantic enterprises of the Crusades, had a rock-cut moat.

The castle of Aleppo, reared up on a vast stone-faced tell, consisted of a ring of prodigious battlements and a mighty gate tower, all beautifully built of surfaced stone adorned with deeply graven texts and arabesques. Inside was an immense well similar to that in the citadel of Cairo, and a mosque of great antiquity. This tell is the site on which the ancient city stood, the Khaleb of the Hittites and Assyrians, the Chalybon of Xenophon and the Seleucids.

There is very grave danger that this castle will be destroyed and the tell itself levelled in order to make room for one more slum in Aleppo, as though the city were cramped in its expansion. A contractor hopes to sell the stones of the castle as building material, and to make a profit by destroying the famous records of the past. At Urfa the calamity has come: the walls are down, the castle is to be levelled for building material, although its site, a naked and waterless rock, is useless for modern requirements.

At Berejik, the Zeugma of the Romans, the rock-cut galleries and masoned ramparts are being torn down to build a gaol. The as yet unexplored ruins of Carchemish are to be exploited for the benefit of the Baghdad Railway, not as an attraction for tourists, but as a quarry for building bridges.

This tale of destruction and vandalism is, unfortunately, no new thing in Upper Syria. Ibrahim Pasha razed the Byzantine walls and wrecked the Crusading castle of Antioch because the city revolted against his rule some eighty years ago. With the stones, he built extensive barracks for the Egyptian garrison just outside the Gate of St. George. These are now completely ruinous. This was a case of official vandalism.

After the war of 1878, a colony of Moslem Tcherkesses from the lost provinces of Kars and Batoum was planted at Membij, the Heliopolis of more favoured days. They have systematically pulled down every building, and removed every stone which was upon another, and have distributed them over the countryside in the shape of stone dykes to enclose their fields. Numerous fragments of inscriptions are visible on isolated blocks, but in the circumstances all hope of reading them is lost. This may be taken as an example of private enterprise.

In the old, unregenerate days of the Hamidian régime such things were deplorably possible, and one could only hope for better times. The Constitution has come, and by way of celebrating its third birthday the Young Turks have openly permitted the destruction of Urfa, and seem calmly to contemplate a similar fate for Aleppo, with its remains and traditions dating back beyond the time of Abraham.

Baalbek, on the contrary, has been excavated, cleared, and properly cared for. Even as a tourist-resort it has drawn many to the country, from whom the officials of the Ottoman Government have probably collected more money, in one way or another, than would have been gained by selling its ruins as building material.

Masyad, the city of the Assassins, where the great castle serves as almshouses for the poor, is in danger. Shaizar, where the collapse of a tower occasioned by an earthquake crushed the entire dynasty, and so caused the unconquered fortress to fall into the hands of the Emir of Hama, is in danger. Sahyun, the most perfect specimen of the Frankish baronial castle in Syria, may be pulled down. Rum Kaleh, the "Roman Castle" in the Euphrates, may be converted into a series of bridge-piers. Harim, with its wonderful gate and curious underground passages and stairways, may be turned into road-metal.

In the heart of the wide plains of Upper Syria there are deserted Roman towns, dating from the sixth and seventh centuries, with forum, basilica, portico, and shops, roofless but otherwise almost intact. They are hardly known, their story has not yet been unfolded, their evidence is still ungiven, yet they may be swept away to provide building materials for further acres of insanitary, featureless slums for the problematic benefit of some Levantine building contractor.

If the Ottoman Government would but realise it, these stones are far more valuable to the country in their present positions than any possible rearrangement either as house-property, railway bridges, or even aqueducts could make them. Travellers will come considerable distances and spend a great deal of money to visit ancient buildings or wonderful remains such as those at Aleppo or Urfa, but, as a rule, they do all in their power to avoid the "modernised" Levantine town.

H. PRIE-GORDON.

OUR SUPPLEMENT.

THE MAKING OF "THE ILLUSTRATED LONDON NEWS."

WE venture to think that the Supplement given with this week's Issue will be of exceptional interest to readers of *The Illustrated London News*. Few, perhaps, realise, as they turn over a copy of the paper, the vast amount of labour of various kinds that is involved in its production, and the number of marvellous mechanical processes through which it passes before it is delivered to the public. There are some people whose lack of curiosity and imagination does not prompt them to inquire how a thing is done: they accept the wonderful products of modern machinery and invention as matters of course. There are many more, however, whose sense of wonder is alive and eager, and to such this picturesque account of the making of an illustrated paper will, doubtless, appeal as something of a revelation. It will appeal not only to the general reader, but especially to the student of modern journalism and the industries associated with it; and we should imagine that teachers, in particular, would find this Supplement of great value for a lesson to their pupils on a subject of living interest. To those of mechanical tastes there is no more fascinating machinery than that which the genius of modern inventors has perfected for the printing of newspapers; and to these are added, in the case of an illustrated paper, the no less wonderful methods used in the reproduction of drawings, paintings, and photographs. In these and all other departments of production *The Illustrated London News*, it will be seen from the Supplement, possesses apparatus of the most advanced and modern kind. Quite recently the whole of the machinery department was reorganised, electric power was substituted for steam power, and new presses of the latest type were installed.

THE PLAYHOUSES.

"THE CONCERT." AT THE DUKE OF YORK'S.

WE have it on unimpeachable authority that there are only some half-dozen plots at the service of any story-teller, and we may suppose the permutations of details to be also limited, so that it would be scarcely fair to complain in respect of "The Concert," an American version of a play of Hermann Bahr's, that its scheme is rather hackneyed, and that the drollery of its main situation—showing, as it does, an eloping pair paid out in their own coin—runs on none too unfamiliar or original lines. Long before now have we watched on the stage a wronged husband and a deserted wife allying themselves to punish their spouses by pretending to accept the state of affairs as natural and even welcome, and to have, in their turn, fallen in love with one another, and therefore to be very glad of the opportunity of a change of partners. But the possibilities of fun in such rearrangement of a quartette of sex cannot be said to have been exhausted, and it is not because "The Concert" repeats an old formula that its chances of a London success seem dubious. Where the piece lies open to criticism is in the fact that, while its motivation is farcical, the treatment and the pace are those of comedy; that while the game of reprisals constitutes the entire play, the humours of such a notion are worn out long before the author is content to cease harping on this one string. There are some ingenious complications, some happy turns in Herr Bahr's story of how a musician, much pursued by women, and a married pupil with whom he runs away, are cured of their infatuation almost before they have started their elopement; and a certain piquancy is lent to the spectacle of the checkmating of the sinners, thanks to the cynicism, not to say levity, with which their partners treat their folly. But the business of make-believe proves too long-drawn-out and monotonous, and there are far too many *longueurs* in the play. Nor, though it is strongly cast, does it afford any real openings to its interpreters. Mr. Ainley elaborates the part of the excitable and nerve-racked musician very amusingly, though it is all a matter of externals. Miss May Blayney as the frivolous young pupil, who disgusts her lover by her hearty appetite, justifies the hopes she held out as a comédienne by her performance in "The Little Damozel," but she has not, in point of fact, very much to do. Mr. Charles Bryant is emphatic and forcible in the rôle of the coquette's husband, and that is all he is allowed to be. Miss Irene Vanbrugh is wasted on the character of the musician's indulgent and patient wife; she with her exceptional comedy and emotional gifts deserves to be better treated. If it were reduced to half its present length "The Concert" would be much more entertaining.

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By G. K. CHESTERTON.

I DO not understand Welshmen. When we say we do not understand such-and-such a person, we usually mean that he has been making himself a nuisance. He has been bothering us in some way; and the puzzle of his motives and further intentions has become a practical one. I do not mean anything of the kind here: I mean barely what I say. The distant Trojans never injured me. Taffy never came to my house or stole any part of the provisions. On the contrary, historically speaking, I went to Taffy's house and took away a good deal of what belonged to him. I do not think that Taffy is a thief; I do not even know enough about him to be sure of the preliminary statement that he is a Welshman. I mean, quite simply and ingenuously, that I know nothing about Wales—not even (for certain) that there is such a place. I went, indeed, a few weeks ago to a curious place full of rocks; and the people there said it was Wales. But, then, other people said that these people were very sly, and that you could not believe anything they said. But, then, as I did not believe the second people who did not believe the first people, it all came back to the same comfortable condition as before, which is one of blank and disinterested nescience. It is a condition I am in with regard to a large number of things in this world. I keep my faith for the things of another world. About this world I am a complete agnostic.

But in this particular case of ignorance I rather fancy that I am not alone. I think that the great majority of Englishmen have no real notion of the Welsh type or spirit, whatever it is. They have conceptions of the Scot and the Irishman, false conceptions, but always containing some lines of a true tradition. The Englishman does, so to speak, understand the Scotchman even when he misunderstands him. The Englishman does know what the Irish are, even while he demands indignantly of heaven why they are. The stingy Puritan in plaid trousers is a very crude and unjust version of that queer blend that makes the Scot—the combination of a certain coarseness of fibre with great intellectual keenness for abstract and even mystical things. Still, it is a version; the prose and poetry of the Scot remain in the caricature. The picture of Paddy on Donnybrook leaves out all the subtlety and self-tormenting irony that are mixed up with the pugnacity of the Irish. Still, the Irish are pugnacious; the Englishman has got the leading feature right. He knows that, for all his economics, the Scotchman often has a bee in his bonnet, and he knows that the Irishman generally has a wasp in his—a thing that will sting itself or anyone else merely for fun or glory.

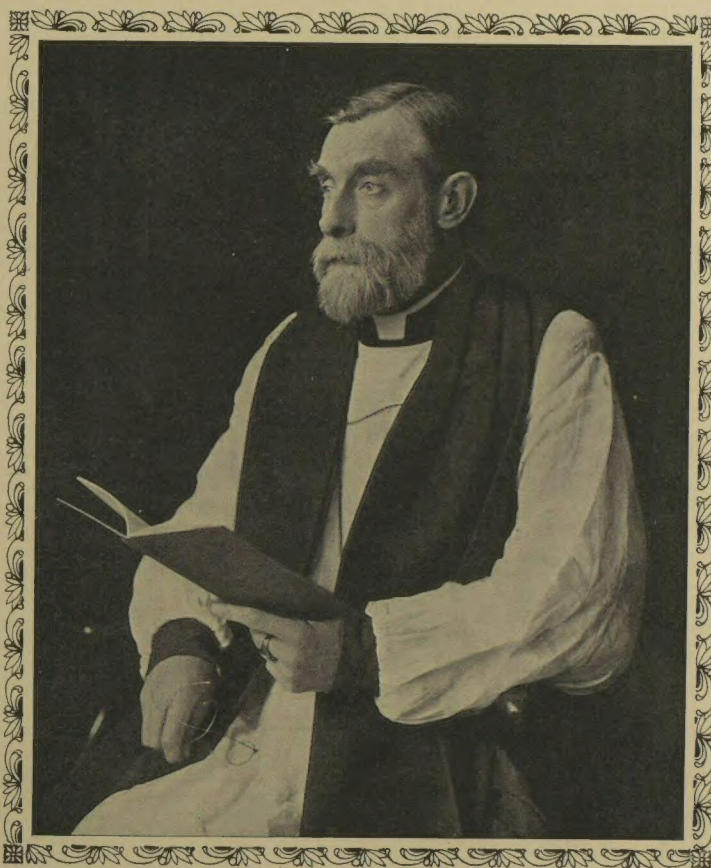
In these cases, the caricature, though stiff, highly coloured, antiquated, and largely false, tells the remains of several truths. But who on earth has ever seen a caricature of a Welshman? In *Punch* and such papers we never see anything but pictures of a Welshwoman—as if there were no males in that peculiar country with the rocks. Even the woman is only marked as Welsh by wearing an extraordinary costume, rather like that of Cinderella's supernatural godmother. Without the artist suggesting any costume at all, one would recognise the very silly portraits of Irishmen with long upper lips, in the style of apes. Without any plaid trousers to assist the mind,

one could spot the stiff beards and rocky cheek-bones of the Scotchmen of Charles Keene. But if you took away the Welshwoman's extraordinary hat, there would be nothing whatever to show that she was a Welshwoman. We have not in our minds a Welsh type to make fun of. It is interesting to remember that apparently Shakespeare had.

This state of entire non-understanding (as distinct from misunderstanding) of the Welsh seems to me just now to be not only unique, but important and rather serious. For, unless I am very much mistaken, Wales is going to play some peculiar, and perhaps dominant, part in the developments of our extraordinary time. If the Welsh begin to influence us without our having

the thing is true. Mr. Lloyd George is very much more genuine and sincere and formidable in his capacity as leader of the little Welsh nation than he is in any of the other capacities in which he is foolishly praised and ridiculously reviled. But to anyone who really has an eye for history in action, the smallest strike secretary in a Welsh railway or colliery bulks much bigger in the present picture than Mr. Lloyd George. And it has been in Wales that many of the most dramatic and effective labour revolts have happened: above all it was in Wales that they presented peculiar features of their own, bad or good, which marked them out from the whole temper and habit of England in recent times. The modern theory of animals was challenged in the episode of the ponies in the mines. The modern theory of Jews was challenged in the violent Anti-Semite riots of the last few weeks. Things fierce and unfamiliar, things lost since the Middle Ages, are coming upon us out of the West.

As the curious incident of the quarrels between Welshmen and Jews has been mentioned, I will take the opportunity here of correcting a curious mistake that clings to the minds of numbers of my correspondents. There is in particular a gloomy gentleman in America who keeps on asking me how my Anti-Semite prejudice is getting on, and generally displaying a curiosity about how many Hebrew teeth I have pulled out this week, and how often a Pogrom is held in front of my house. He appears to base it all on some statement of mine that Jews were tyrants and traitors. Upon this basis his indignation is eloquent, lengthy, and (in my opinion) just. The only weakness affecting this superstructure is the curious detail that I never did say that Jews were tyrants and traitors. I said that a particular kind of Jew tended to be a tyrant and another particular kind of Jew tended to be a traitor. I say it again. Patent facts of this kind are permitted in the criticism of every other nation on the planet: it is not counted illiberal to say that a certain kind of Frenchman tends to be sensual or a certain kind of Prussian tends to be supercilious. It is as plain as a pikestaff that the Parisian tradition of life and letters has a marked element of sensuality; it is as plain as a pikestaff that the Prussian theory of the aristocracy and the army has an element of rather crude conceit. It is also as plain as a pikestaff that those who are creditors will always have a temptation to be tyrants, and that those who are cosmopolitans will always have a temptation to be spies. This has nothing to do with alleging that the majority of any people falls into its typical temptations. In this respect I should imagine that Jews varied in their moral proportions as much as the rest of mankind. Rehoboam was a tyrant; Jehoshaphat was not. In what is perhaps the most celebrated collection of Jews in human history, the proportion of tyrants was one in twelve. But I cannot see why the tyrants should not be called tyrants and the traitors traitors; why Rehoboam should not cause a rebellion or Judas become an object of dislike, merely because they happen to be members of a race persecuted for other reasons and on other occasions. Those are my views on Jews. They are more reasonable than those of the people that wreck their shops; and much more reasonable than those of the people who justify them on all occasions.



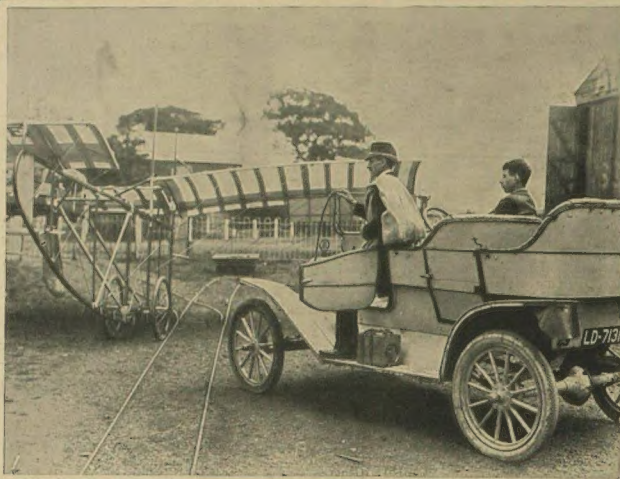
A STRONG UNIVERSITY REFORMER APPOINTED TO THE SEE OF OXFORD:
DR. CHARLES GORE, PREVIOUSLY BISHOP OF BIRMINGHAM.

Those interested in University Reform will be eager to watch the results of the appointment to the Bishopric of Oxford of Dr. Gore, who holds strong views on that question. In ecclesiastical matters a High Churchman and an adherent of the Tractarian movement, in politics the Bishop is a Liberal—a rather uncommon combination. It is noteworthy that both he and his predecessor at Oxford, the late Dr. Paget, were contributors to the famous volume of religious essays, "Lux Mundi," of which Dr. Gore was also editor. It was at Oxford, as Fellow of Trinity and Librarian of the Pusey Library from 1884 to 1893, that he first became prominent as a man of influence, and it was in the Oxford diocese that he held his only living, that of the Vicarage of Radley. He was Canon of Westminster from 1894 to 1902, when he became Bishop of Worcester. He was appointed to Birmingham in 1905. Dr. Gore is a nephew of the fourth Earl of Arran, and his mother was a daughter of the fourth Earl of Bessborough and widow of the Earl of Kerry.

yet even begun to imagine them, we shall have the whole Irish business over again; the gradual or imperfect understanding of a thing in the process of wrestling with it in the dark. The indications of such a movement in Wales (wherever it is), the suggestion of the growing influence of Welshmen (whoever they may be), is something that comes to us rather by widely distributed happenings and hints than in any theatrical example. Some, however, would call Mr. Lloyd George a theatrical example; he has been called even more extraordinary things. And in that degree

THE FIRST UNITED KINGDOM AERIAL POST: A FULL-DRESS REHEARSAL.

PHOTOGRAPHS BY TOPICAL.



1. THE ARRIVAL OF THE POSTMAN WITH LETTERS TO BE CONVEYED BY AEROPLANE FROM HENDON TO WINDSOR. | 2. THE POSTMAN HANDING A MAIL-BAG TO THE AIRMAN.
 3. A FLYING POSTMAN READY TO START, WITH THE MAIL-BAG SLUNG BELOW HIM.
 4. FIXING A MAIL-BAG TO THE AEROPLANE, BELOW THE AIRMAN. | 5. POSTING A LATE-FEE LETTER FOR CONVEYANCE TO WINDSOR BY AEROPLANE.

The first United Kingdom Aerial Post, which is to work between Hendon and Windsor, will start on Saturday next (September 9). Meantime, we are able to give these photographs of a full-dress rehearsal held in preparation for the event. The service has been arranged to commemorate the Coronation by giving practical tests of the value of aeroplanes for carrying mails; and the profits will be devoted to a public charity approved by the Postmaster-General. None but the special postcards and envelopes issued by the honorary organising Committee will be carried, and these must be posted only in the special boxes, a list of

which has been published, or at the London Aerodrome at Hendon. Both postcards and envelopes bear a design of Windsor Castle, and are sold ready stamped—postcards, stamped for inland postage, at 6½d. each; envelopes, stamped for inland postage, at 1s. 1d. each. The postmark will be "First United Kingdom Aerial Post," and the date. The mails, having reached Windsor, and having been delivered at the Post Office there, will be sent from the Royal Borough to their destinations in the ordinary way. As a rule, the airman alone will be on the aeroplane, but on occasion a postman may accompany him.

LUMINOUS "FINGER-POSTS" IN THE SKY: ELECTRIC LAMPS INSIDE BALLOONS.

DRAWING BY W. B. ROBINSON; PHOTOGRAPH BY ALFRED GRADENWITZ.



LIGHTING THE HIGH-ROADS OF THE AIR: GUIDES FOR AIRMEN FLYING BY NIGHT.

Since the airman now frequently flies by night, some means of guiding him on these excursions has become necessary: it is obviously impossible for him to pick his way in the dark by features of the landscape as he does in the daytime. Hence it is argued that the high-roads of the air should be lit at intervals by electric lamps inside small captive balloons, such as those here shown, these being arranged, of course, in so definite a manner and being so marked that they would serve as serial "finger-posts." Each of the balloons in question is

2½ metres (about 8 feet 2 inches) in circumference, and has inside it a 100-candle-power electric lamp. It is held captive by a wire through which the electricity is fed to the lamp. In other cases it carries its own accumulator. It is suggested that at first the balloons, which, by the way, are red, should be flown along the coasts of seas to warn airmen that they are nearing the water. Later, they could be used to indicate overland routes. In connection with the balloons is a device designed to give warning of the approach of fog.

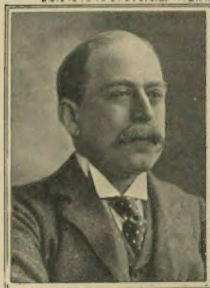


Photo. Lafayette, Dublin.
SIR GEORGE YOUNGER, Bt., M.P.,
Appointed Scottish Unionist Whip.



Photo. C.N.
MR. S. H. DUFF,
One of the Chief Witnesses in the
Plymouth Espionage Case.



Photo. Benzel.
SENHOR MANOEL ARRIAGA,
Elected the First President of the Portuguese Republic.



Photo. C.N.
MR. E. C. TARRAN,
One of the Chief Witnesses in the
Plymouth Espionage Case.



Photo. Lafayette, Dublin.
MR. REDMOND BARRY,
Appointed Lord Chancellor of Ireland.

PORTRAITS & PERSONAL NOTES

SEVERAL new appointments were made the other day in the Unionist party organisation, Lord Farquhar becoming Treasurer; Sir George Younger, Scottish Unionist Whip; Mr. W. Hayes Fisher, Provincial Whip; and Mr. William Jenkins, Chief Organising Secretary. Sir George Younger will have no Parliamentary duties, but will supervise Scottish Unionist interests, and act as intermediary between headquarters and the party in Scotland, where Mr. James Adam is to act as his representative and political secretary. Sir George Younger has sat for Ayr since 1906. He is chairman of the well-known firm of brewers, Messrs. George Younger and Son, of Alloa, and in 1896 he served on the Royal Commission on the Licensing Laws. He has been President of the County Councils Association of Scotland and President of the National Union of Conservative Associations in Scotland. He is also a Director of the National Bank of Scotland and of the North British and Mercantile Insurance Company.

distinguished journalist and speaker, and holds the degree of Doctor of Laws in the University of Coimbra. Politically, he is a moderate man, and not a strong partisan, a fact which augurs well for the maintenance of the Republic. At his inauguration, Senhor Arriaga paid a tribute to the Provisional President, Senhor Braga.

Grenfell, the heir to the barony, was born in 1905, and his brother, the Hon. Arthur Grenfell, in 1908. At the funeral, which took place at Beaconsfield, the King and Queen were represented by her Majesty's Private Secretary, Mr. E. W. Wallington. The service was conducted by the Bishop of Peterborough.

Ireland's new Lord Chancellor, Mr. Redmond Barry, is only forty-five, and has already held the offices of Solicitor-General and Attorney-General for Ireland, to which he was appointed respectively in 1905 and 1909. After studying at the Royal University of Ireland, he was called to the Irish Bar in 1888, and took silk in 1899. He entered Parliament four years ago as Member (Liberal) for North Tyrone, in which constituency his new appointment will necessitate a bye-election.

In the present state of the Near East, a matrimonial alliance between the royal houses of Russia and Serbia is of considerable interest, not that the engagement of Prince Jean Constantinovitch of Russia and Princess Hélène of Serbia is likely to have much direct political significance. Prince Jean is only distantly related to the Tsar, being the eldest son of the Grand Duke Constantine Constantinovitch, whose father was a brother of the Tsar's grandfather. Prince Jean was born at Pavlovsk in 1886, and is a sub-lieutenant in the Cavalry Regiment of the Guard, an aide-de-camp, and a Knight of the Order of St. Andrew. His fiancée, Princess Hélène, is the only daughter and eldest child of King Peter of Serbia and Queen Zorka, who was a Princess of Montenegro. The wedding is arranged to take place on Sept. 7.

His Highness the Nizam of Hyderabad, who died suddenly on Tuesday, was the Premier Prince of the Indian Empire, and a direct descendant of Abu-Bekr, the successor of Mohammed and first of the Caliphs, whose daughter Ayesha was one of the wives of the Prophet. The late Nizam was born in 1866, and succeeded his father when he was only three years old. He was formally installed as Nizam in 1884, and proved a most enlightened and beneficent ruler. His loyalty to the British Crown was deep, sincere, and practical.

At the opening of the proceedings in the supposed case of espionage at Plymouth, the charge brought against Ober-Lieutenant Schultz, of the 13th Hussar Regiment of the German Army, was that of having incited Mr. Samuel Hugh Duff, a Plymouth solicitor, to commit an offence against the Official Secrets Act. At the first day's proceedings, it was alleged that the prisoner said he represented an important German newspaper, and that he approached Mr. Duff and Mr. E. C. Tarran, who is in business at Plymouth, with a view to their acting as naval and military correspondents, and supplying information about the British Army and Navy. They subsequently communicated with the Plymouth police, at whose suggestion they supplied answers to sets of questions put by Lieutenant Schultz. Mr. Duff mentioned in his evidence that Lieutenant Schultz had remarked, in course of conversation, "It has been said I am a spy, but I give you my word of honour that I am not." Mr. Tarran stated that Lieutenant Schultz had told him that the German newspaper he represented was "run by the Government." Further evidence was given on Tuesday by other witnesses, including a British naval officer and a German waiter, and finally the prisoner was committed for trial.



Photo. Voigt.
PRINCESS HÉLÈNE OF SERBIA,
DAUGHTER OF KING PETER,
Who is to Marry Prince Jean
Constantinovitch of Russia.

Eldest son of that famous Scottish Churchman, Principal Rainy, who died in 1906, the late Mr. Adam Rolland Rainy was born in 1862, and received his education at the Universities of Edinburgh, Berlin, and Vienna, graduating in medicine and surgery as well as in arts. After spending a year in Australia and New Zealand, he practised for some years as a surgeon-oculist in London. In 1900 he took up political work, and, as a Liberal, unsuccessfully contested Kilmarnock Burghs, for which, however, he was returned in 1906 and had since represented.

At the recent unveiling of the memorial to King Edward at Marienbad, which took place after a celebration of High Mass in the Parish Church, attended by all the local dignitaries, the Burgomaster of Marienbad, Dr. Reiniger, reminded his hearers that "Marienbad had loved, and regretted, King Edward, not only as the great ruler, but also as a noble gentleman." Afterwards a marble monumental tablet with the King's bust in medallion was unveiled in the English church, at which ceremony Sir Fairfax Cartwright, British Ambassador at Vienna, was one of the speakers; this memorial has been erected by the English visitors.

There are not many men of public affairs in London who could boast, like the late Judge Willis, that they have never ridden in a motor-car and never used a telephone. These things were among the late Judge's aversions, which also included the Church of England and Lord Beaconsfield. Judge Willis was himself a strong Baptist, but, curiously enough, he was a close friend of the late Mr. Justice Day, an equally strong Roman Catholic. Liberal in his politics, Judge Willis was M.P. for Colchester from 1881 to 1885. Before his appointment, in 1906, to the County Courts of South-west, Greenwich, and Woolwich, he was for nine years on the County Court Bench for Norfolk and Cambridge. In spite of his outspoken manner, he was extremely popular.



Photo. Elliott and Fry.
THE LATE JUDGE WILLIS,
The well-known County Court Judge.

Admiral Craigie, whose father was also an Admiral, entered the Navy in 1863, and served in the Kaffir War of 1877-8 and the Zulu War of 1878-9. Later he commanded the Fleet at the Cape. In 1887 he gained the Royal Naval College prize for steam and naval architecture. In 1897 he took command of the *Camperdown* at Crete, and five years later he was appointed Superintendent of Chatham Dockyard, a post which he held until 1905.

Senhor Manoel Arriaga, the first President of the Portuguese Republic, who was elected by 121 votes to 86 for Dr. Bernardino Machado, was born in Horta Island, Azores, and is seventy years of age. He is a



Photo. Russell.
THE LATE DR. A. R. RAINY,
Son of Principal Rainy, and
Member (Liberal) for Kilmarnock
Burghs.



Photo. Lafayette, Dublin.
THE LATE LADY GRENFELL,
Wife of Field-Marshal Lord
Grenfell, and formerly a Maid
of Honour to Queen Victoria.

Lady Grenfell, who died last week at Adair Lodge, Aldeburgh, was the second wife of Lord Grenfell, whom she married in 1903. Her maiden name was the Hon. Margaret Aline Majendie,



Photo. Sander.
"THE GRATEFUL KURSTADT TO ITS ROYAL
PATRON EDWARD VII": THE MEMORIAL TO KING
EDWARD RECENTLY UNVEILED AT MARIENBAD.

and she was the only daughter of the late Mr. Lewis A. Majendie, M.P., and Lady Margaret Majendie, sister of the Earl of Crawford. Lady Grenfell was a Maid-of-Honour to Queen Victoria for seven years—1894 to 1901. She leaves three children, the eldest of whom is the Hon. Madeline Grenfell, born in 1904. The Hon. Pascoe



Photo. Elliott and Fry.
THE LATE ADMIRAL R. W.
CRAIGIE,
Formerly Superintendent of
Chatham Dockyard.



Photo. Illus. Bureau.
OBER-LIEUTENANT PHIL
MAX SCHULTZ,
Committed for Trial on a Charge
of Espionage at Plymouth.



Photo. Boissonnas and Egler.
PRINCE JEAN CONSTANTINO-
VITCH OF RUSSIA,
Who is to Marry Princess Hélène
of Serbia.



Photo. Bourne and Shepherd.
THE LATE NIZAM OF HYDERABAD,
The Premier Prince of India.

PORTUGAL: MANOEL THE KING; AND MANOEL THE PRESIDENT.

PHOTOGRAPHS BY TOPICAL AND BENOLIEL.



1. KING MANOEL OF PORTUGAL: HIS MAJESTY ON HIS WAY TO THE NEXT DRIVE WHILE GROUSE-SHOOTING WITH THE MARQUESS OF RIPON. ON DALLOWGILL MOORS.

King Manoel of Portugal is, as everyone knows, in England, leading the life of a country gentleman. Meanwhile, the first President of the Portuguese Republic has assumed office, in the person of Senhor Manoel de Arriaga, who was elected by 121 votes to the 86 of Senhor Bernardino Machado. The new President made the affirmation required by Article 43 of the Constitution in the following words: "I undertake solemnly on my honour to maintain and

2. THE PRESIDENT OF PORTUGAL: SENHOR MANOEL DE ARRIAGA ACKNOWLEDGING THE ACCLAMATIONS OF THE CROWD AFTER HIS ELECTION AS FIRST PRESIDENT OF THE PORTUGUESE REPUBLIC.

observe with loyalty and fidelity the Constitution of the Republic; to fulfil the laws, promote the welfare of the nation, and uphold and defend the integrity and independence of the Portuguese fatherland." The election was greeted with salvos of artillery. President Arriaga then went on to the balcony, to be cheered enthusiastically. Senhor de Arriaga, who was born in the Azores, of old and noble stock, is seventy. When the Republic was proclaimed he became Advocate-General.

FROM THE WORLD'S SCRAP-BOOK.

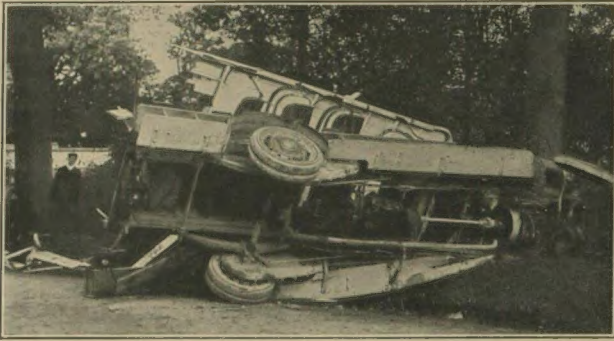


Photo. L.N.A.

THE TERRIBLE CHAR-A-BANCS ACCIDENT NEAR NEWCASTLE: THE UNDER-PART OF THE WRECKED CAR AND (ON THE LEFT) THE TREE IT STRUCK.

Last Saturday an appalling accident happened to a motor char-a-bancs conveying a party of thirty-three young people—members of the Consett Co-operative Choir—from Consett to Prudhoe, near Newcastle-on-Tyne, to take part in a choral competition at a flower show. While descending a dangerous hill, the brake failed to act, and the driver warned the passengers to jump off, but no one did so except the conductor, who thus escaped with slight injuries. Meantime the car gathered speed until it was plunging down the hill at about fifty miles an hour. Matthew Wilson, the driver, heroically stuck to the steering-wheel and managed to guide the vehicle round several corners, but at another it swayed, struck against a tree, and whirled round with a terrific crash on to the ground. Six young women and four men were killed, and many of the others were severely injured. The driver had a wonderful escape. A pathetic feature of the event was that the choir party had insisted on taking that particular road against the wishes of the driver.



Photo. Topical.

A DISASTER IN WHICH TEN WERE KILLED AND TWENTY INJURED: THE OVERTURNED CHAR-A-BANCS, SHOWING THE WRECKAGE OF THE SEATS.



Photo. G.P.O.

THE ALLEGED "GERMAN SPY" BEFORE THE MAGISTRATES AT PLYMOUTH: THE SCENE IN COURT, SHOWING THE PRISONER IN THE DOCK (ON THE RIGHT).

The proceedings at Plymouth against Ober-Lieutenant Max Schultz, charged with inciting a Plymouth solicitor to commit an offence against the Official Secrets Act, took an interesting turn on Tuesday, when evidence was given by a German waiter, to whose address at Walthamstow, it was stated, certain letters had been sent to be forwarded to Ostend. The witness said that he knew nothing of the prisoner, except from the case then proceeding, had never seen the letters, and could not account for their being sent to his house. He added that he was away from home all day, and that his wife, who had been subpoenaed, was too ill to attend the court that day. The prisoner was committed for trial.



Photo. Topical.

ANTI-JEW RIOTING IN SOUTH WALES AFTER THE STRIKE SETTLEMENT: A SHOP AT BARGOED WITH ITS WINDOWS SMASHED.

In spite of the settlement of the strike, rioting continued in South Wales last week, and took an anti-Jew form. Several shops were damaged, including that of Mr. Levene. The windows were smashed by the mob as they were being dispersed by soldiers, who made a bayonet charge.



Photo. Topical.

AN ARREST DURING THE DISTURBANCES: THE POLICE TAKING A PRISONER, HANDCUFFED, TO THE STATION.

It is said that the rioting in South Wales was largely the work of hooligans, who were really unconnected with the strikes. The photograph shows the arrest of one of the crowd by the police. It will be noted that the prisoner is handcuffed.

BETTER THAN BOTTLES OF GIN AND NON-EVAPORATING: STRANGE "COINS."

PHOTOGRAPHS BY THIRLE.



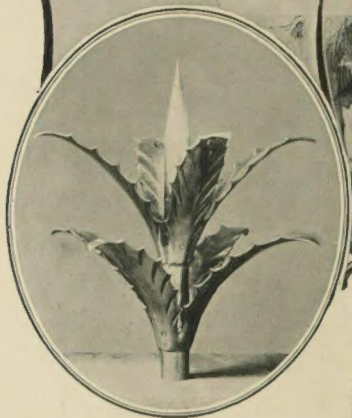
MONEY NOT "DISSIPATED" IN TRANSIT: TOKENS FOR WHICH GOODS ARE, OR HAVE BEEN, TRADED.

Some few days ago attention was called to the fact that amongst the "money" current in Southern Nigeria must be numbered bottles of gin. These, said Mr. Lewis Harcourt, explaining their use, were apt to diminish in actual value, if not in trading value, during transit, for there were those who could not resist the temptation of removing a certain

quantity of the gin and filling with water the lacuna thus created. For all that, most of them were "good" for a considerable period. This recalls other strange "coins" once used, or still used, for buying goods or labour. Some of the more curious forms taken by these are illustrated above.

SCIENCE AND

NATURAL HISTORY



A "NIAGARA OF ELECTRICITY" AS HAIL-PREVENTER: A DEVICE WHICH IS TO BE FITTED TO THE EIFFEL TOWER.

It is claimed that this new form of lightning-conductor will attract a veritable "Niagara of electricity," an amount far in excess of that attracted by the ordinary lightning conductor, and so disperse the hail-bearing clouds, the bursting of which does so much damage to the country-side. The point of the device is covered with pure copper, a line of which runs down to the earth.

brutality, are matters of psychological study. The temperament of the crowd is a fairly familiar phase of mental science. As in the case of actual war and the demeanour of the nations in conflict, so in internecine strife we have to consider well the attitude and motives which lead men to protest with violence against

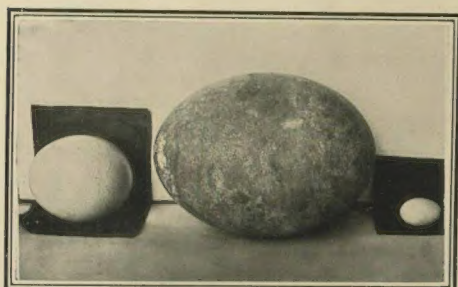


Photo. W. L. Beasley.

AN EGG WITH A CAPACITY OF TWO GALLONS: THE APVORNIS EGG COMPARED WITH EGGS OF AN OSTRICH AND AN ORDINARY HEN.

The particular apvornis egg illustrated is six times the size of the ostrich egg, and has a capacity equal to that of 150 hen's eggs (two gallons). Its lengthways circumference is two feet eight inches, and it is two feet two inches round the middle.

the one case, and equally detest and condemn the lead to senseless and unjustifiable anarchy in the other.

What one notices, first of all, in the psychology of the strike is that our civilisation, education, and religion seem to fail us in a crisis when every man's hand is at his neighbour's throat. When we "see red," we lose our heads. The emotional wave sweeps all before it. When, in Liverpool, I saw the street-battles, I asked myself whether the "ape and tiger" whereof Tennyson speaks are so moribund in us as optimists have hoped and believed. A very little fire still kindles a great matter in humanity's affairs, and the way to industrial peace often seems to be through the pathways of violence and blood. But there is also the gross neglect by the unthinking masses of conditions the study of which, the political economist tells us, constitutes the only true basis for founding reasonable and just relations betwixt man and man. The people become mad, not over their real or supposed grievances, but over the sheer lust of destruction. It is the old battle-spirit, called forth equally by a national disaster and a fight in the street. The psychologist knows, and everybody else knows, that it is useless and hopeless to attempt to argue things with a man whose brain-cells have despised inhibition, and have got beyond control. In Liverpool, where they have established a Corporation depot to supply poor mothers with sterilised milk for their infants, thus protecting them against infantile cholera in the hot weather, the officials had to cease their labours. The egregious Strike Committee



THE ORIGIN OF - - - THE BAROMETER - - -

TORRICELLI DETERMINING THE WEIGHT OF THE ATMOSPHERE AT DIFFERENT HEIGHTS BY A COLUMN OF MERCURY. 1643.

SCIENCE JOTTINGS.

THE PSYCHOLOGY OF THE STRIKE.

NOW that the great strike is over, and, one may hope, done with, it is permissible to review events in the light of calm reason. That there is a scientific side to matters of war, pestilence, and famine, will not be denied by any thoughtful observer. Just as the causes which determine strikes, represented for the most part by gross ignorance of what Thomas Carlyle foolishly called the "dismal science"—otherwise political economy—so the evolution of discontent and the results of dissatisfaction, manifested in gross conditions, real or supposed, which tend to their undoing. It is much the same with a righteous war and a strike *en-cue*. There must exist a definite motive which begets passion, anger, and the desire to kill; and we can applaud the instinct which sends men forth to right a wrong in ideas that

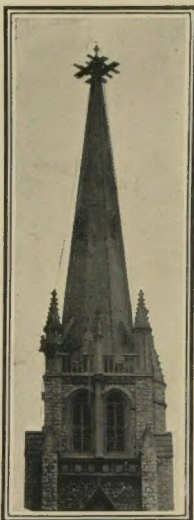


Photo. W.G.F.

DANGER TO A CHURCH AVERTED BY A GLANCE THROUGH A TELESCOPE: THE SPIRE OF ST. JAMES'S, BLACKHEATH, UNDER REPAIR.

An astronomer engaged in testing a new telescope recently at Greenwich Observatory turned the instrument on to the spire of St. James's Church, Blackheath, which is about a mile from where he was working. To his astonishment he saw a fissure some fourteen feet long in the stonework of the steeple. The authorities were informed at once, and steepjacks are now busy arresting what might have become a dangerous state of affairs.

prevented the raw milk from reaching the depot, and otherwise obstructed the process of sterilisation. As the *Liverpool Daily Post* inquired, "Who is it that suffer and die?" Not the infants of the well-to-do, but the children of the very men who were stopping the milk and ice supply of hospitals all round. This way, truly, madness lies.

Politicians and others will talk for hours over a matter of trifling significance; pot-house orators will declaim the doctrine of "down with everything that is up"; and to go "agin' the Government" is an article of supreme faith with many—not all—who wear cloth caps. I wonder whether Mr. Tom Mann's psychology is of normal kind when he bargains for two pounds per week as a wage for every man, whether he is an efficient worker or a "slacker." It gives one to think whether the person who bawls his loudest day by day in the market-place regarding the rights of labour has ever bethought himself of the value of the work he talks about.

The elementary teaching of political economy is that every man's work has a minimum and a maximum value settled by the laws of supply and demand. There are fluctuations in the matter of this work value as definite as are those of the barometer. The environment at large sends wages up and wages down. How anyone, dwelling outside the walls of an institution for the reception of imbeciles, can for a moment suppose that the world's work could go on prosperously, under all states of trade, at a fixed and immutable wage, constitutes a puzzle beyond the solution of any rational being. Yet this is precisely what is advocated by the modern street-corner orator. I suppose the corollary of all this is that nobody is worth more than two pounds a week, be his talents and labours what they may; and the scavenger who sweeps the streets must perforce enjoy a dignity and reward of work equal to that of the doctor who may have to cure him of a serious disease.

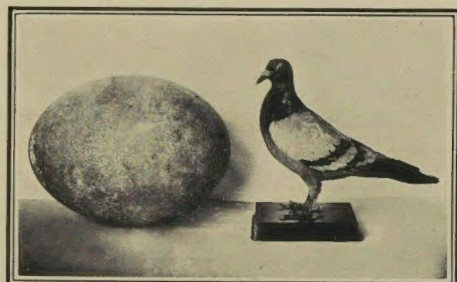


Photo. W. L. Beasley.

EQUAL TO 150 HEN'S EGGS: THE EGG OF THE EXTINCT WINGLESS BIRD, THE APVORNIS, COMPARED WITH THE LARGEST-SIZE PIGEON.

The apvornis, a great wingless bird from twelve to fourteen feet in height, is found as a fossil in Madagascar. The egg illustrated, though termed a fossil specimen, is not petrified, and is in perfect condition. It is in the Museum of Natural History, New York.



Photo. W.G.F.

STRANGELY GARBED FOR WORK IN A LONDON STREET: USING A SAND-BLAST DURING THE EXTENSION OF A TRAMWAY SYSTEM.

The fine sand is driven at high velocity by means of air or steam, and, of course, possesses great abrasive power under this condition. Thus iron and steel structures may be cleaned before repainting, stone-work may be dressed, castings and files may be cleaned. In the case illustrated the man is burnishing the end of a section of rail. Those using sand-blasts must be protected by their dress and masked as shown.

The psychology of the strike shows us also how the real issue of labour-arguments for better pay becomes lost in the furore of popular agitation. Does anyone suppose or believe that the looting of shops, the battling with policemen, the placing of obstructions and the loosening of rails on the railway, and the setting fire to warehouses, are necessary and logical arguments in the demand for better wages? If the hooligans who are credited with most of the outrages were the real culprits, where were the protests, and, what is more, the active assistance given to the police by the respectable strikers?

A sorry spectacle for our common humanity all this, which I saw in various quarters of the land and which was chronicled in every journal. The lesson of all history, unfortunately, but one we must bear in mind for the sake of the national credit, is one which warns us that, when the next social rebellion occurs and discontent takes to broken bottles as persuaders, the nation, for the sake of its very existence, requires at once to reply by the argument of the rifle. ANDREW WILSON.

GRASSES AS "BLACK": PAPUAN WIDOWS LITERALLY IN WEEDS.

THE BRITISH ORNITHOLOGISTS' UNION'S EXPEDITION TO DUTCH NEW GUINEA.



1. LITERALLY IN WEEDS: A WIDOW IN MOURNING.

2. THE OUTWARD SIGNS OF GRIEF: YOUNG WIDOWS IN THEIR MOURNING DRESSES.

3. IN FULL MOURNING, INCLUDING A "POKE BONNET": THE WIDOW OF THE HEADMAN OF WAKĀTIMI.

The natives in certain districts of Dutch New Guinea are without clothing in the general sense of the word, but an exception to the rule is provided by the widow during her period of mourning. Then, having yellow-ochred her face, she dons quite an elaborate "dress" of

weeds and grasses, together with, if she be old, a kind of "poke bonnet." A death is signalled by much wailing, continued by the village until the burial of the dead (an hour or so before daylight) and by the relatives for perhaps a week. Men are mourned, but not women.

PRIMITIVE PEOPLES OF ALMOST UNKNOWN CUSTOMS: FEATURES, FASHIONS, WEAPONS, CRAFT, AND DWELLINGS OF PYGMIES AND OTHER PAPUANS.

THE BRITISH ORNITHOLOGISTS' UNION'S

EXPEDITION TO DUTCH NEW GUINEA.



1. DETERMINED TO HAVE WARLIKE EXPRESSION, A PYGMY WEARING A HORNBILL'S BEAK IN HIS NOSE. | 2. THE WORK OF NATIVES STILL IN THE STONE AGE, FORMING A CANOE OUT OF A TREE TRUNK. | 3. ASSURING FUTURE ADORNMENT, PEGS OF WOOD KEEPING OPEN THE HOLES PIERCED IN A BOY'S NOSTRILS.
7. IN THE PYGMY VILLAGE, A TYPICAL HUT—BUILT ON PILES AND LINED WITH BARK TO KEEP OUT WIND AND RAIN. | 8. A RESULT OF MUCH LABOUR WITH STONE AXES, A MIMIKA RIVER CANOE—A TREE TRUNK HOLLOWED OUT WITH STONE AXES. | 12. SPORT FOLLOWED ONLY WHEN THE WATER IS CLEAR, FISHING WITH BOW AND ARROW ON THE MIMIKA.
11. ARMED WITH HIS TOOTHED CLUB, AN OLD WARRIOR STILL PREPARED TO DEFEND HIS HOME AGAINST RAIDERS. | 13. A TYPICAL PYGMY OF WAMBERIMI, AN OLD MAN SEEN BY THE EXPEDITION.

The pygmies discovered by the expedition average about four feet five inches in height, and would seem to be a distinct race of Papuan pygmies dwelling along the lower mountains. Their arrows are much better finished than those of the Papuans who live on a lower level. They make fire by friction, as illustrated on another page. Their worldly possessions are carried in rope "sacks." Other natives seen were scarcely less interesting, as the photographs here and elsewhere in the number bear eloquent witness. The members of the expedition were ample guarantee that it would be successful, and it is not surprising to learn that the discoveries they made are of great geographical and anthropological importance, and that they gathered together a valuable collection of the flora and fauna of the hitherto unknown district they traversed, and so added considerably to the treasures of the British Museum. They consisted of Mr. Walter Goodfellow, who is a traveller and naturalist of

4. WITH THEIR WORLDLY GOODS IN ROPE "NECK-BAGS", PYGMY MEN OF EIGHTEEN AND TWENTY-SIX. | 5. GUARDING THEIR HOMES, PYGMIES, ARMED WITH BOWS, SQUATTING BEFORE ONE OF THEIR HUTS. | 6. A CURIOUS COIFFURE, A NATIVE WITH HAIR SPREAD OUT FANWISE BY MEANS OF SPLIT RATTAN.
9. BUILT AT THE MOUTH OF THE MIMIKA RIVER, A TEMPORARY DANCING HALL. | 10. SHOWING HUTS AND GROUND ARTIFICIALLY LEVELLED, IN THE PYGMY VILLAGE OF WAMBERIMI. | 15. THE LIPS "POUTED" FOR CONVERSATION, WAMBERIMI PYGMIES TALKING.
14. WEARING AN EARRING CONSISTING OF A SMALL GOURD AND CUSCUS FUR, A TAPIRO PYGMY. | 16. ARMED WITH A STONE CLUB, A FAVOURITE WEAPON OF OFFENCE AND DEFENCE, A MAN OF PARAMAU.

exceptional attainments, and was in command; Mr. Guy C. Shortridge, collector of mammals, birds, reptiles, and so on, a capital taxidermist and skilled collector; the late Mr. Wilfred Staiker, who worked in the same sphere as Mr. Shortridge, and was unfortunately drowned in the Mimika; Mr. A. F. R. Wollaston, botanist, entomologist, and medical officer to the expedition; holder of a similar position with the Ruwenzori Expedition, and a traveller of much experience; Captain C. G. Rawling, that very excellent surveyor, who did such valuable survey work in Tibet, and earned the Murchison award of the Royal Geographical Society; and Dr. Eric Marshall, assistant surveyor and surgeon, who will be remembered as having accompanied Sir Ernest Shackleton on his great journey towards the South Pole. Obviously the British Ornithologists' Union have earned sincere congratulation on their enterprise, which was suggested by Mr. W. R. Ogilvie-Grant.

MOURNING A SLAIN BOAR: A REMARKABLE PARAMAU CEREMONY.

THE BRITISH ORNITHOLOGISTS' UNION'S EXPEDITION TO DUTCH NEW GUINEA.



1. PREPARATIONS FOR THE BOAR-KILLING CEREMONY: THE PLATFORM SET UP FOR THE RITE.

3. MOURNED BY A WOMAN KISSING ITS BODY: THE SLAUGHTERED BOAR.

2. GETTING READY THE SACRIFICE: TYING THE BOAR'S LEGS.

4. LAMENTING THE SACRIFICE: MOURNING THE DEAD BOAR.

Our photographs illustrate one of the strange tribal customs witnessed by members of the expedition dispatched to Dutch New Guinea by the British Ornithologists' Union, the sacrifice of a boar at Paramau (Toupoué) with various peculiar rites. The mourning for the dead animal is particularly remarkable, and is accompanied by much wailing. In the case shown it was carried out not only by the men present, but by the women, the latter kissing the body. A feast followed.

FIRE BY FRICTION: PYGMIES OF PAPUA KINDLING A LIGHT.

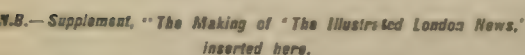
THE BRITISH ORNITHOLOGISTS' UNION'S EXPEDITION TO DUTCH NEW GUINEA.



1. THE FIRE-MAKERS, TAPIRO PYGMIES ABOUT TO KINDLE A LIGHT BY RUBBING A LENGTH OF SPLIT RATTAN AGAINST A STICK OF HARD WOOD THE STICK HELD DOWN BY THE FEET OF THE MAN ON THE LEFT OF THE PHOTOGRAPH; THE RATTAN READY UNDER IT.

2. MAKING FIRE BY FRICTION; THE PYGMY DRAWING THE RATTAN RAPIDLY BACKWARDS AND FORWARDS UNDER THE STICK, TO SET IT SMOULDERING. 3 AND 4. BLOWING THE SMOULDERING RATTAN INTO A FLAME, THAT DRY LEAVES, OR TINDER, MAY BE FIRED.

A stick of hard wood is partly split and kept open by means of a wedge. Beneath this is placed a length of split rattan, which is drawn rapidly backwards and forwards. In due time, the friction causes the rattan to smoulder; the smouldering rattan is blown upon; and dry leaves (or tinder) placed beneath it are thus fired.



At the Sign of St. Paul's.



Photo, Cadby.
MR. PERCEVAL GIBBON,
Whose new Novel, "Margaret Harding," has been published by Messrs. Methuen.

they will be permitted to reach their destination. "Vous avez voulu, George Dandin!" By George Dandin I intend the sages whom we somnolently trust with the destinies of our "right little, tight little island."

My opinions on politics, the social questions, and serious flaring questions have never been blazoned or bellowed; I have not the larynx and other organs of voice, or the confidence in my own sagacity, or anything else that writers or speakers on momentous themes require, except some knowledge of the "Politics" of Aristotle. But at this juncture a business-like invasion by a highly disciplined foreign Power with no nonsense about it would have been welcomed, I think, by Mr. Carlyle.

People who dwell with books and thoughts are not useful in times of tumult. When they do make themselves heard, it is usually by a rather hysterical kind of utterances. Thucydides was a wiser man: getting into trouble with Demos, he sat down quietly and wrote his

mere Fellow of a College." He lived from 1614 to 1687—all through the Civil War and the Restoration—and had the luck just to escape from the end of the follies of James II. in 1688. He was the friend of Cudworth (have you studied the learned Cudworth deeply?) and of Glanvil,

Hylobares, which means, apparently, "heavy in matter," *enfoncé dans la matière*. He had a Platonic or Neoplatonic affection

for Lady Conway, a learned lady whose husband wrote rather unfeelingly about her health, and probably thought her a hysterical hypochondriac. She asked More "How Man can be Restored to what he Fell from, and why the Angels that Fell cannot?" She said "the Devils that Fell"; but a devil has no great distance to fall, and she clearly meant Angels.

If More had not written what Mr. Saintsbury calls "an enormous Song of the Soul" in Spenserian verse, Lady Conway would not have troubled him with her unavailing regrets for the Angels that Fell. They have made their own bed, and they must lie on it. But, no doubt, though Cromwell was in and the Anglican Church was out, More passed happy hours in answering the question.

We do not know that she was pretty, but More, who writes of "the Heroical Pulchritude of your noble Person. Plato, if he were alive again, might find his timorous Supposition brought



Jane Shore, accused of poisoning Richard, Duke of Gloucester, did penance in St Paul's in a white sheet... about 1485.

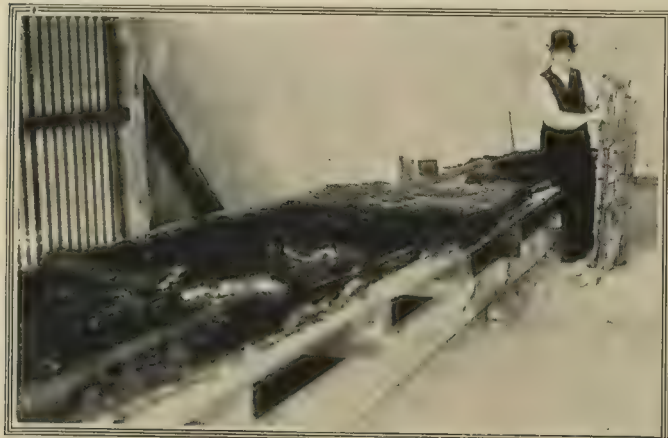
ANDREW LANG ON "QUIET PEOPLE, TRYSTED WITH TUMULTS," ESPECIALLY DR. HENRY MORE.

THESE lines are penned by a scribe who does not know when, if ever,



LEAVING THE PLACE WHERE IT LAY IN THAMES MUD FOR SIXTEEN CENTURIES, THE ROMAN BOAT FOUND ON THE SITE OF THE NEW COUNTY HALL BEING DRAGGED UP AN INCLINE INTO THE STREET.

the father of Psychical Research, and the historian of the Drummer of Iedworth. He liked Locke, though he thought Locke a moral materialist, and called him



THE FIRST ANCIENT ROMAN BOAT FOUND IN BRITAIN, AND THE ONLY SINGLE-DECKER KNOWN: ONE SIDE OF THE CRAFT AND A STUMP OF THE MAST.

The ancient Roman boat unearthed last year during the digging of the foundations of the new County Hall for London at the south end of Westminster Bridge, was removed last week to the new London Museum at Kensington Palace. We published photographs of the boat at the time of its discovery in our issue of August 27, 1910. The presence in it of coins of Tetricus in Gaul (268-273 A.D.), Carausius in Britain (286-293), and Allectus in Britain (293-296), fixed its date and Roman origin. The remains of the boat, enclosed in wire-netting to keep them together, were placed in a deal framework, on two lorries, which were then dragged by chains up an incline from the lower foundations of the County Hall to the street. Drawn by twelve horses, the boat was then conveyed to Kensington under police escort, accompanied by Mr. Guy Laking, Director of the London Museum, and other officials. The whole work took from 4 a.m. to 5.30 p.m., when the boat reached Kensington Palace.



THE MOST INTERESTING RELIC OF ROMAN LONDON YET DISCOVERED: THE ANCIENT BOAT PACKED FOR REMOVAL TO LONDON'S NEW MUSEUM AT KENSINGTON PALACE.

History, making for himself an everlasting name, and proving a boon to examiners thousands of years after the sod was green over the son of Olorus.

In the great Civil War, the delightful poets who wore the sword got into trouble and prison; one, Suckling, tired of it all, they say, and chose a Roman death. But Vaughan "lay low" and wrote his sacred poems; and Stanley, though not now much read, composed pleasant amorous verse while the cannon roared; and good Izaak Walton went a-fishing, and his prayers were answered on a twenty-ninth of May, in a sort which can hardly have been entirely to his liking.

Among these quiet people, trysted with tumults, I admire "The Learned and Pious Dr. Henry More, Fellow of Christ's College in Cambridge," whose Life was written by Richard Ward, A.M., Rector of Ingoldsby in Lincolnshire, 1710. The book is edited by Mr. M. F. Howard, and is published by the Theosophical Publishing Society. The title does not raise great expectations, but it is a very pleasant book—a history of a gentleman who, for more than fifty years, was, in Overbury's phrase, "a



EMERGING INTO THE TRAFFIC OF MODERN LONDON: THE ANCIENT ROMAN BOAT COMING OUT OF THE COUNTY HALL SITE TO PASS OVER WESTMINSTER BRIDGE.

into absolute Act, and to the enrayishment of his amazed Soul might behold Virtue become visible to his outward Sight." Plato was, notoriously, a judge of good looks, and the phrase proves that Cambridge philosophers, in those days, were masters of the art of paying compliments. But the husband of Lady Conway became tired of her headaches, as famous as those of Mrs. Wenham, the lady who was prevented from chaperoning Mrs. Rawdon Crawley on an unhappy occasion. To the horror of Dr. Henry More, his Astraea became a Quakeress! George Fox came to Ragley Hall, where More and Jeremy Taylor had been so happy telling ghost stories, and that about Lord Orrery's butler, who floated in the air, while his attached and alarmed friends stood about, waiting to field him when he came down, as you may see in the frontispiece of Glanvil's "Sadducismus Triumphatus."

More was a very good and amazing man; with a philosophy compact of "Platonism, Christianity, Jewish traditions, medieval magic, spiritualism, mathematics, and the new Science." But he could not stand a Dissenting Mystic!



Photo, Elliott and Fry.
SIR HENRY COTTON,
Whose Volume of "English and Indian Memories" is to be published by Mr. Fisher Unwin.

DOCKED AT KENSINGTON PALACE: THE "L.C.C." ROMAN SHIP.

DRAWN BY A. FORESTIER.



FROM THE DAYS OF ALLECTUS TO THE DAYS OF GEORGE V.: THE ARRIVAL AT THE LONDON MUSEUM OF THE ANCIENT ROMAN BOAT FOUND ON THE SITE OF THE NEW COUNTY HALL.

Last week the ancient Roman war-ship found on the site of London's new County Hall at the southern end of Westminster Bridge was safely conveyed to the new London Museum at Kensington Palace, where a special site adjoining the main building has been assigned to it. Around it will be built a structure some forty feet broad by a hundred feet long. The work of removal required the utmost care, owing to the great weight and the extreme fragility of the boat. Drawn by twelve horses, and guarded by police, the boat was the centre of a

picturesque little procession as it passed to its home at Kensington. In order to give it passage-way, part of the brickwork and railings had to be removed at the entrance to the Gardens, and some of the horses were taken out. Our drawing was taken after the boat had passed through the aperture made for it. As mentioned under the photographs given on another page, the boat dates from the time of Allectus, who set himself up as Emperor of Britain, and ruled for seven years till he was defeated and slain by Constantius Chlorus in 296 A.D.

YOUNG TURKS AS VANDALS: HISTORIC WALLS AS BUILDING MATERIAL.



1. THREATENED WITH DESTRUCTION THAT A NEW "SLUM" MAY BE BUILT, THE CASTLE OF ALEPPO AND THE VAST STONE-FACED "TELL" WHICH IS A SIGN OF EXTREME ANTIQUITY.
2. POSSIBLY TO BE RAZED TO THE GROUND; A TOWER AND PART OF THE WALL OF THE CASTLE OF ALEPPO, SHOWING WHERE, IN THE PAST, THE "TELL" HAS BEEN "SKINNED" OF ITS STONES FOR BUILDING MATERIAL.
3. DESTROYED FOR THE SAKE OF THEIR STONES, WHICH ARE DESTINED TO BE USED AS BUILDING MATERIAL: THE BYZANTINE WALLS ABOVE THE MOAT AT URFA, NOW PULLED DOWN.

It would seem that certain of the Young Turks are bent on vandalism, on destroying historic monuments in a desire to be up-to-date. "At Urfa," to quote the article by Mr. H. Pirie-Gordon, which appears elsewhere in this number, "the calamity has come: the walls are down, the castle is to be levelled for building material, although its site, a naked and waterless rock, is useless for modern requirements." These walls, be it remarked, were of Byzantine construction, repaired and added to by Armenians, Latins, the Kipchak Atabegs of Aleppo and Mosul, the Kurdish Ayyubids, and even the Ottoman Turks. The castle of Urfa, "the

scene of some of the most romantic enterprises of the Crusades, had a rock-cut moat, of which those at Nephin or Hunin in Palestine are poor imitations." The "tell" on which the castle of Aleppo stands is the site of the ancient city, the Khaleb of the Hittites and Assyrians, the Chalybon of Xenophon and the Seleucids. There is grave danger that both "tell" and castle will be razed to the ground. Some of the "tell" was "skinned" years ago for the sake of the stones. It is to be hoped that strenuous protest will be made against further destruction. (See Article elsewhere.)

AS HARD TO SELL AS THE TOWERS OF NÔTRE DAME: THE LOST LEONARDO.

PHOTOGRAPH SUPPLIED BY MANSSELL.



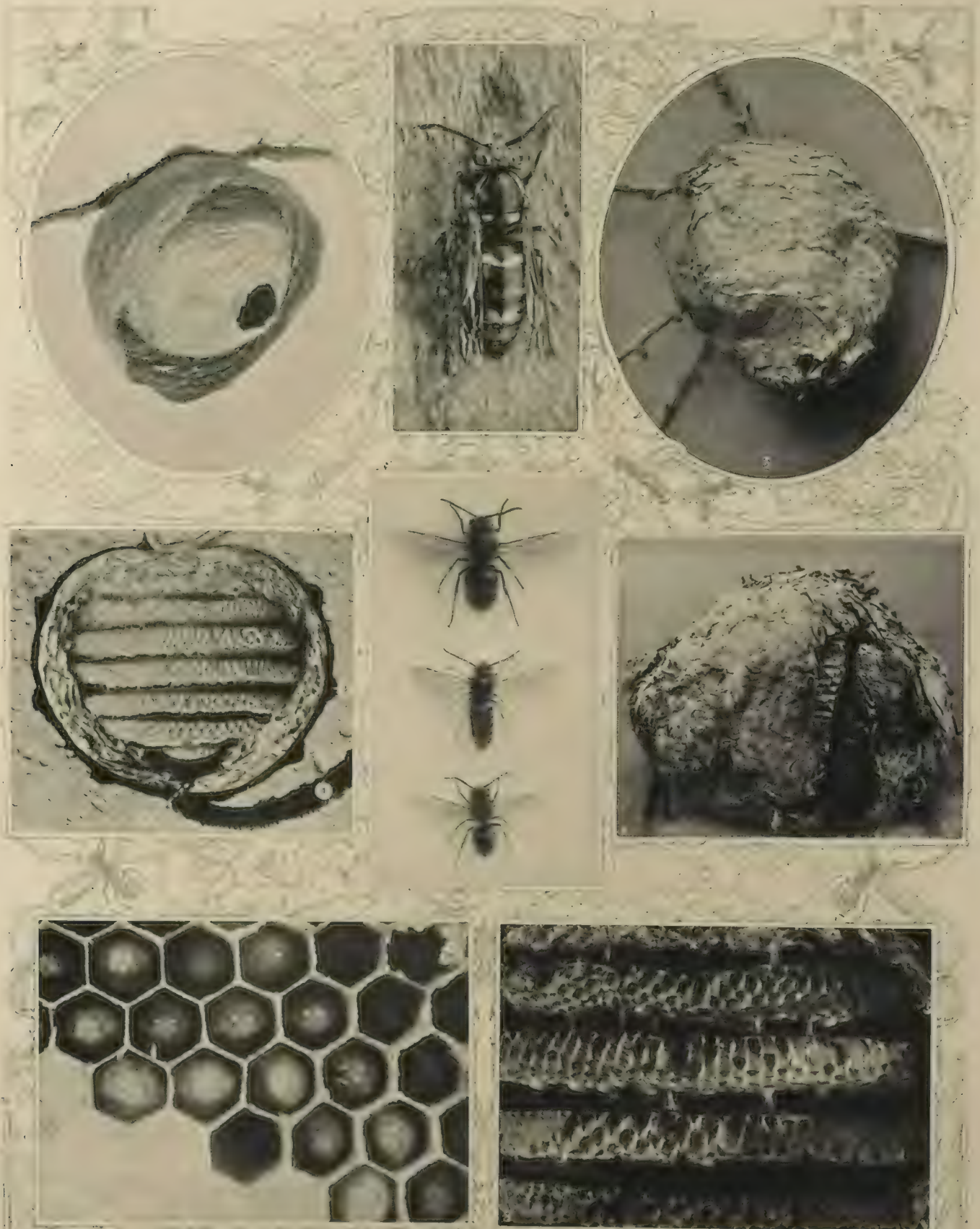
CAUSE OF A FAR GREATER SENSATION THAN GAINSBOROUGH'S "DUCHESS OF DEVONSHIRE": LEONARDO DA VINCI'S WORLD-FAMOUS PORTRAIT OF MONA LISA, THIRD WIFE OF FRANCESCO DEL GIOCONDO.

When Leonardo's "Gioconda" was missed from the Salon Carré, two theories were advanced as to the cause of its disappearance. The first was that it had been taken away by someone desirous of proving that the treasures of the Louvre were insufficiently guarded; the second that a lunatic had succumbed to its fascinations and made off with it, to gloat upon its charms in secret. The first idea gained less favour as time went on, for it was felt that the confiscation of the panel for an hour or two only would suffice anyone wishing to make a case against the museum officials; the other, in consequence, gained ground. None could imagine that the work had been taken for sale—as well, as a writer put it, seek to

sell the towers of Nôtre Dame. Anyway, its disappearance caused far greater sensation than did that of Gainsborough's "Duchess of Devonshire" years ago; a fact not to be wondered at, for it is one of the most famous, if not the most famous, of paintings in the world. "Mona Lisa" was Lisa di Anton Maria di Noldo Gherardini, daughter of Antonio Gherardini, and married Francesco di Bartolommeo di Zenobi del Giocondo in 1495. It is thought that Leonardo began the portrait in the spring of 1501, put it aside for a time, and completed it in 1504. According to Vasari, he kept someone constantly near his sitter, "to sing or play on instruments, or to jest and otherwise amuse her"; hence the "enigmatical smile."

A PLAGUE IN THE MAKING: WASPS AND THEIR NESTS.

PHOTOGRAPHS BY HAROLD BASSIN.



1. THE FOUNDATION OF A WASP COLONY: THE SMALL NEST CONSTRUCTED BY THE QUEEN WASP.

2. PREPARING TO FORM THE PAPERY COVERING OF THE NEST: THE QUEEN WASP COLLECTING WOOD FIBRE FROM A FENCE, THAT SHE MAY WORK-IT UP WITH HER SALIVA.

3. A HOLDER OF MUCH POTENTIAL TROUBLE: A NEST OF THE COMMON BRITISH TREE WASP ON A LARCH BRANCH.

4. A SECTION OF A COMMON WASP NEST IN THE LATE SUMMER: (1) THE PASSAGE FROM THE NEST CAVITY TO THE OUTER WORLD. (2) THE ROOT FROM WHICH THE NEST HANGS. (3) GALLIES ROUND THE NEST CAVITY FOR THE USE OF WASPS ENGAGED IN REPAIRING THE OUTER COVERING OF THE NEST. (4) THE ONLY ENTRANCE TO THE NEST PROPER.

5. THE THREE CASTES OF THE WASP WORLD: THE QUEEN (TOP), THE MALE OR DRUNK (MIDDLE), AND THE WORKER OR STERILE FEMALE (BOTTOM).

6. REMOVED FROM ITS SUBTERRANEAN HOME: A LARGE WASP'S NEST—THE OUTER COVER BROKEN AND SHOWING THE COMBS WITHIN.

7. WASPS-TO-BE AT HOME: CELLS CONTAINING GRUBS.

8. IN A WASP'S NEST: THE COMBS HANGING ONE FROM THE OTHER BY STRONG, PAPERY "STAIRS."

Wasps have been particularly to the fore this season, and have caused much trouble. At Kingston, for example, thousands invaded a confectioner's shop and made it necessary to close it for five days, while traffic on the main road at Deeping St. Nicolas, Lincolnshire, was

suspended for several hours the other day, as some wasps, whose nests had been disturbed by men repairing the road, attacked not only those workers, but the passers-by. The beginning of a wasp colony comes when a queen, leaving in the spring the place in which she has

(Continued opposite.)

PRISON-BREAKING: THE WASP'S ENTRY INTO THE WORLD.

PHOTOGRAPHS BY HAROLD BASTIN.



1. THE SILKEN CAPS SPUN BY THE GRUBS WHEN FULL GROWN: WASP CELLS SHORTLY BEFORE THE INSECTS EMERGE.

Continued. remained during the winter, builds a small nest of a few incomplete cells, in each of which she lays an egg. These hatch quickly, and eventually the young enter the world as worker females, prepared to relieve their mother of the feeding of the later grubs. Cell after cell is added to the nest. In August, or thereabouts, larger cells are formed, and from these come

2. BREAKING THEIR WAY INTO THE WORLD: YOUNG WASPS PIERCING THE SILKEN CAPS THEY SPUN WHEN IN THE GRUB STAGE.

fertile males and females, who leave the colony to mate. Then the colony itself dies off, those grubs which remain being killed by the workers. Of those who have paired, the males die; while the females, or some of them, seek shelter in which to spend the winter—that each may found a new colony in the following spring.

MUSIC.

SOME of the arrangements for the autumn festivals have now been completed, but down to the present there is no suggestion of any very striking novelties to make the season memorable. At Norwich, where Sir Henry Wood will be in charge of the festival arrangements, Dr. Walford Davies is to conduct a performance of "Everyman," and Sir Edward Elgar has promised to return from Italy to direct his oratorio, "The Kingdom." Mozart's "Requiem" and "The Golden Legend" are also to be heard. Mme. Ada Crossley and Lady Speyer (who was formerly before the public as a violinist) are among the soloists.

There can be no doubt but that our provincial festivals serve to keep the spirit of music alive in the country, but it may be doubted whether they do all that might be done to stimulate it. Doubtless one source of difficulty is rehearsal. Choral societies learn certain works, the "Elijah" and the "Messiah," for example, and they expect to have a chance of presenting them in honour of all special occasions. Doubtless they are entitled to some reward for their labours; but in demanding this concession they help to make rather barren programmes and to keep away many people who would respond to any well-considered and well-managed effort to produce new work. The policy of being all things to all subscribers has not proved remarkably effective, if we are to judge by the balance-sheets. Perhaps a more courageous and progressive endeavour would not be altogether out of place. Our festivals might do so much. They might bring together the best native work of the preceding twelve months; they might take the lead in encouraging and developing home talent; they might rely upon British music and find their trust justified. Many organisers and large subscribers will agree with this contention, but the "Messiah" and "Elijah," and a few other works no less familiar, will continue to play the part that the head of King Charles took in the memorial of Mr. Dick. And this is not good for music, though it is very soothing to choral societies.

The announcement that Dr. Richter will not appear at Covent Garden for the autumn season of German opera is a very serious one. At the moment of writing



ANXIOUS TO REGAIN THE CANADIAN CUP FOR CANADA; MEN OF THE ROYAL CANADIAN MILITIA ARTILLERY PRACTISING WITH A 4.7-IN. GUN AT SHOEBOURNNESS.

A detachment of the Royal Canadian Militia Artillery, commanded by Lieutenant-Colonel A. F. McNachten, recently came over to this country to take part in the Territorial Artillery Competitions. Last week they joined in the contests on Salisbury Plain, which they declared resembles their native prairies. At the end of the week they went to Portsmouth, and it was arranged that on Tuesday they should take part in the Coast Defence Competition, for the Prince of Wales's Prize, in the Isle of Wight. In 1907 the Canadian Cup was carried off from Canada by a team of British Volunteer gunners under Colonel S. Wishart, and the Canadians are very anxious to recover the trophy. There was no time to decide this competition on Salisbury Plain, but it was hoped to hold it this Saturday (September 2) on the Lydd ranges.

it is too early to say what the result of his decision will be, or whether anybody with like knowledge and authority is available to fill the vacant place. Dr. Richter has been conducting at Bayreuth with the greatest success; it is worth noting that the festival performances have succeeded to an unusual extent this year in pleasing everybody. But those who consoled themselves for absence from Bayreuth in the thought that they would see Richter at Covent Garden next month will be very disappointed.

In the meantime, Mr. Hammerstein's "London Opera House" proceeds apace towards completion. We hear of hundreds, literally hundreds, of dressmakers, busy making thousands, literally thousands, of costumes for the largest stage in London, of many thousand electric lamps, and a total outlay running a long way into six figures. All this is, of course, very fine indeed, but the problem before Mr. Hammerstein is not the spending of money, but the recovery of what is spent. It is good to hear that he is doing something to make the gallery seats comfortable. In any opera-house the gallery holds a very large percentage of real music-lovers and enthusiasts; they are regular supporters of the house, and deserve far better accommodation than usually falls to their lot. If Mr. Hammerstein establishes a reform in this direction he will have done well. The idea of fitting telephones to all the boxes is amazingly up-to-date, but at the same time a little distressing. How can the best music, how can those great but undiscovered *prima donne* whom Mr. Hammerstein holds in reserve, charm us to forgetfulness of the world we live in if there is a telephone in every box to call us back to earth?

The Royal Academy's departure from Tenterden Street to the new home in Marylebone Road has just taken place, and in celebration of the move to larger premises some special teaching for teachers is being undertaken. Nothing could be more important. For long years the incompetent private teacher has been a heavy drag upon the wheels of musical progress, and the writer has met many sane parents who, out of mere kindness of heart and weakness of intellect, have cheerfully surrendered their children's music to incapable folk who had no excuse for posing as teachers other than the desire to live.

PROCRASTINATION THE THIEF OF—BEAUTY

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It is useless to attempt to cure over-stoutness or obesity by dieting oneself to the point of starvation. Malnutrition never cured man or woman of anything; and, indeed, malnutrition is one of the causes, as it is one of the effects, of the disease of obesity. The whole digestive apparatus is "out of gear." A powerful tonic is needed, and the remarkable tonic and stimulative properties of Antipon are, in their lasting efficaciousness, only second to the wonderful fat-reducing qualities of this unique and invaluable product.

The sooner Antipon is taken the better. Procrastination is the thief of—beauty, for does not neglected over-fatness make one look years older? This is especially the case when the sufferer has vainly tried to effect a cure by partial fasting, and mineral and other drug-specifics of a dangerous character and lastingly detrimental to the constitution.

To revert to the original dictum, procrastination is, indeed, the thief of time; for, to neglect one's obese condition when such a splendid remedy as Antipon is to be had, at the small cost of 2s. 6d. and 4s. 6d. a bottle, at every chemist's shop in the United Kingdom—nay, throughout the whole British Empire—is almost

voluntarily to shorten one's life, so many are the dire evils that arise from obesity. A famous physician connected officially with life assurance societies has laid it down that obese people ("over-weights," he

Therefore, stout reader, procrastinate not! Let nothing stand in the way of your taking a course of Antipon, which can be followed in such privacy that none need know you are taking any sort of treatment, except, indeed, that the marvellous improvement in your appearance, the rapidly returning slenderness, and the general look of recovered youthfulness will proclaim to all and sundry the sovereign value of Antipon as fat-reducer and tonic.

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This is a good object lesson to those stout persons who have procrastinated. *It is never too late to start the Antipon treatment. Nil desperandum.*

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calls them) "never die of senile old age." Obesity is one of the serious obstacles to life assurance, the companies generally refusing the obvious risk, or, at best, only accepting obesity "lives" at a heavy premium. The heart is the first of the vital organs to be affected by fatty excess; and when the over-stoutness is allowed free development, Antipon being foolishly ignored, fatty degeneration of the heart and kidneys, enlarged liver, and other morbid conditions are inevitable.



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“King's Head” is stronger.

Both are obtainable everywhere at 6½d. per oz.

THREE NUNS CIGARETTES

(HANDMADE) 4d. for 10.
(MEDIUM) 3d. for 10.

(No. 221)



THE CHRONICLE OF THE CAR.

"IN Collins Street stands a statue tall. . . Of good men gone where we all must go." So wrote Adam Lindsay Gordon, some forty years ago, of the greatest monument and epitome of all that went to a nation's making. So stood it, indeed, until, to convenience a tramway monopoly, it was removed from the daily reverence of Australian youth and manhood to a lifeless side-street. One of the panels at its base witnessed in perennial bronze the setting forth of a great exploring expedition from Melbourne's Royal Park, with packhorses and camels led by three mounted

trade! but the older story may possibly be longer remembered, even when the aeroplane has conquered the furthest wastes of the great Commonwealth.

The merit of the above tyre-performance, when analysed, seems to lie not so much in the withstanding of road wear or speed—since the earth-tracks of the route would occasion but little wear and in most places inhibit very fast driving—as of the heat probably experienced, followed, as is usually the case in mid-Eastern Australia, by extreme cold at night. The effect of heat, too, on tyres, has been particularly in evidence lately, and has taught us to place no reliance on any but the best of tyres, recent experience with re-treads having rarely been fortunate. Brooklands' experience, too, seems to favour not only Dunlops, but Palmer cord-tyres as well: at least 80 per cent. of the racing cars there being shod with one or other of these two leading makes, which gave little or no trouble in the torrid conditions of the last Bank Holiday meeting. Frankly, last Saturday, I was much too taken up with the machines competing in the British motor-cycle racing events, which broke all known records badly, to notice the tyres.

Never was I so convinced that we must in future place the modern motor-cycle before even its moderately powered four-wheeled congener as a general utility vehicle, worthy as such of more fashionable patronage than it appears to get; while for the ordinary man who cannot afford the

smallest car, or else is not easily able to find room for it where he lives, the motor-cycle promises all the delights of motoring at a nominal figure. So far as I can see, fifty pounds seems about the average price of a good mount—I have known a good last-season's machine cost far less—while a hundred-mile run for about half-a-crown is a promising reality better worth seizing than waiting upon the chimerical prospect of the frequently discussed hundred-pound car. Again, a good side car—Mr. Graeme Fenton's new "Volbrook" whole-cane-woven torpedo model seems to be the final perfection—seems to offer every amenity of the two-seater car

A recent enforced experience in replacing a new and refractory tyre-cover on an ordinary rim inclines one to ask why motorists still consent to buy cars fitted with such wheels and rims. Why indeed, when satisfactory detachable rims in a dozen varieties have been available these seven years at least, with the possibilities of further invention and improvement apparently as great as ever? There are also at least half-a-dozen reliable makes of detachable wheel, of which the Rudge-Whitworth and Riley seem to be among the greatest favourites. Of course, for reasons of storage in the boot of a car—so that other impedimenta may be packed within the tyre-circle—or of weight-saving and permanence on the wheel, or again, as giving away the weakness of the tyre-maker's products less visibly, one may prefer the combination of wire-wheel and detachable rim. There the new "Captain" rim—with its three different varieties of this type of wheel—meets one's preferences exactly. Again, there are segmental rims which should permit the weakest, most delicate hands to fit the newest and stiffest of tyres with ease; and for long enough we have been promised a sectional tyre which, while greatly lessening the trouble of fitting to an ordinary rim, would equally display its numerous advantages on a detachable. So, once again, why do people allow car-manufacturers to foist out-of-date wheels upon them? Motoring is supposed to have become an easy, pleasurable pastime as well as a means of mere locomotion, and no longer to be a protracted struggle with the obstinacies of steel and canvas and rubber. To use an Americanism, let us "cut it right out."

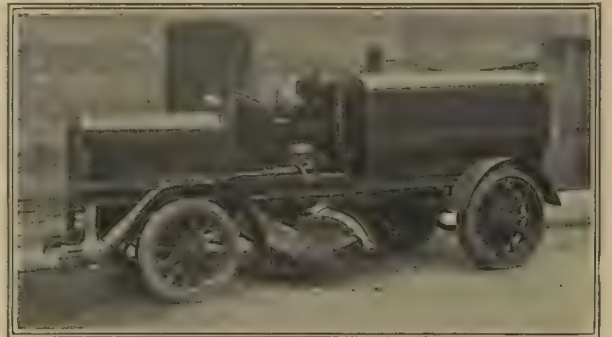


Photo, Illustrations Bureau.

AN AEROPLANE OF FLOWERS AS A TRIBUTE TO A MURDERED AIRMAN: THE FLORAL OFFERING OF THE GRAHAME-WHITE AVIATION COMPANY AT THE FUNERAL OF M. PETIT PIERRE.

It will be remembered that M. Petit Pierre, the late Secretary of the Blériot school, was shot at the Hendon Aerodrome recently by an aviation pupil named Hannot, who thereupon committed suicide. The funeral of M. Petit Pierre took place at Hendon last week. An appropriate floral tribute from the staff pilots and pupils of the Grahame-White Aviation Company took the form, as shown in our photograph, of a model of a monoplane constructed in flowers.

men, surely unforgettable while our race endures—Burke, Wills, and King. Another showed—if the memory of twenty years' absence may be trusted—a camp in the bush, and a burial: a third, the farewell to Burke of King, setting back to hasten a shamefully belated relief expedition; and the fourth, the leading of King—whom privation had blinded—by natives to the spot where Burke had died three days earlier—the place which within ten years was to become an out-station of a flourishing sheep-run. And now I read that a Mr. C. B. King, on a 30-h.p. Cadillac car, has completed a 7000-mile tour from Brisbane, via Sydney, Melbourne, Adelaide, and Broken Hill, at the little pastoral township of Cunnamulla, on the Warrego, having passed within a few miles of this historic spot. Yet where Burke and Wills perished of hunger and thirst and that other King lost his sight, it seems that this car finished on a single set of Dunlop tyres. Truly a romance of



Photo, Topical.

FOR CLEANING THE STREETS OF THE CITY OF LIGHT: A NEW MOTOR-DRIVEN COMBINED SWEEPER AND WATERING-CART ADOPTED IN PARIS.

The authorities of the city of Paris have recently adopted the new vehicle shown above for the purposes of street cleaning. It is called the "Auto Arroseuse-Balayeuse," in that it combines the operations of sweeping and watering, and is driven by motor power.

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Engd. by F. Bartolotti.

SUMMER.

"The street musicians of the heavenly City, the Birds, who make sweet music for us all."

"All disease is the same in all parts of the body. Its cause, morbid humour, which obstructs the circulation of the blood and the electricity or motive power of the brain. Its source, Indigestion and Constipation, or the Putrefaction arising therefrom."—W. RUSSELL.

"Recent researches have led to the establishment of the fact, to the satisfaction of the medical profession of the whole civilised world, that the chief cause of the infirmities of old age, as well as of a large proportion of the diseases of adult life, is the process known as 'Auto-Intoxication,' or self-poisoning.

"This poisoning of our own bodies is due to putrefaction taking place in the large intestine, which in turn is the result of decomposition of food material set up by germs, or microbes, which infest the bowel, and which flourish most where bowel cleanliness least obtains.

"The dual problem, therefore, of maintaining health and postponing the evils of old age resolves itself into the question as to how intestinal putrefaction may be averted or prevented, or in other words, how the bowel may be kept clean."—CHARLES REINHARDT, M.D.

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LADIES' PAGE.

MEMBERS of Parliament have voted themselves £400 a year apiece out of taxation, and women have nothing to say in the matter—but to pay. The occasion has seemed a happy moment to one hundred and sixty of the Members of Parliament to sign a memorial to the Prime Minister to ask that women taxpayers shall not vote until, by a referendum, the male voters consent to the step; this is their thanks. Mr. Hope did, indeed, ask Mr. Lloyd George whether he could not defer this notion of payment of members and use the money to include the wives and home-making mothers of the country (as to whom there is such a splendid supply of sentimentality, but for whose practical benefit there is mighty little care) in the benefits of the National Sickness Insurance Bill. In reply, Mr. Lloyd George made some cheerful by-the-way assertion that possibly he could do both. If there is one principle of government that has emerged as paramount in the minds of the present rulers of the nation—the men of the working classes—it is, that expense in public affairs is to receive absolutely no consideration, so far as they are concerned. In their brief period of rule—some forty years only—the cost of our national government (not including local taxation) has increased *fourfold*! Because a large portion of this extravagant expenditure is raised in taxation which they do not pay, such as income tax, death duties, and taxes on luxuries, the working classes are deluded into the notion that they have no concern about the cost at all; but this is a delusion, as those of them who care to study social economy can perceive.

Meantime, an effect of national extravagance is being experienced in the increased cost of housekeeping. Very likely there are other causes, such as the production of gold, but the taxation piled on manufacturing producers, on the carriers, and on the distributing shopkeepers is a very plain cause of general prices rising. In private life, if our income is in any way disorganised, we economise till our affairs are settled; in national finance, at present, we are doing excessively the reverse. Every housekeeper of modest means feels the result in her home, in the increased price of all domestic necessities. Bread, fortunately, is not very dear; but bacon, meat, butter, milk, eggs, tea, and all sorts of household supplies and clothing are dearer, and vegetables and fruit are at the present time almost unattainable luxuries to the less wealthy classes. It is all very hard on people, single or family providers alike, who have small and fixed incomes. Personal economy must be exercised. A report issued by the Local Government Board tells us that wholemeal bread is a genuine economy, as it "goes much farther," so to speak, as nourishment, and probably, so certain recent experiments indicate, it exercises some still rather mysterious benefit (not previously suspected) on nutrition, over and above its own qualities of food—some nerve elements seem to



AN ORIGINAL TAILOR-MADE GOWN.

The coat and skirt are in grey and black striped cloth cut diagonally, with cape-collar and foot-band of plain black cloth. The hat is of black silk with light grey wings.

be supplied to us by the "germ" that is removed from very white flour.

"Mona Lisa," with her ineffable smile of secret feminine power and pathos and inscrutability, disappeared from the Louvre—irreparable loss! It is passing strange that, in an ancient Egyptian portrait-statuettes of a woman who lived five or six thousand years ago, there may be seen precisely the like subtle smiling, feminine, mysterious expression. The figure was found in a tomb near Luxor by Mr. Robert Mond, and given by him to the Cairo Museum, where it is now in Case Q, Room D. I did not discover the likeness, but was told of it; but the moment I saw the figure, I recognised it by the resemblance to the Leonardo without having to refer to my catalogue. "Mona Lisa" lived, then, five thousand years ago! Everybody knows that the life-like statue of wood, over five thousand years old, representing one of the superintendents of the Pyramid-builders (of which a replica is in the British Museum), is known to us as the "Sheik-el-Belad," or "Village Chief," because the workmen who excavated it recognised in a moment the resemblance of this six-thousand-years' dead man to the head of their own village at the time of the opening of the tomb. How strange to know that, for so long and under such various conditions, humanity has renewed such marked eternal types!

Long spells of dry, hot weather always affect certain people who are constitutionally unable to stand any excessive heat; such people, however, are not the real sufferers and are not the ones who require most commiseration, as many parents of young children know to their cost. This summer sickness, as it is commonly called, takes various forms, and unless looked after in the proper way and attended to at once, can, and often does, become most serious to the very young, causing complaints which even in after life remain troublesome. The great point that parents should recognise is that, during such exceptional weather food that heats the blood should be avoided—whenever possible, that is to say, because at the same time one must not reduce the necessary quantity of food that will build up the child's constitution; but if one can find a food that keeps the blood at an even temperature, and makes the least tax upon the digestion (which especially during hot weather in a young child is at its weakest), and at the same time not only keeps up but increases its strength, then this is the food to give it. As is well known, Horlick's Malted Milk is a splendid food for this class of work, as nothing can be taken that causes so little strain upon the digestive system. It is not necessary to go into all its good points here; suffice it to say that it is confidently recommended for the infantile sickness which has been so prevalent of late, and those mothers who are worried by this trouble are advised to write to Horlick's Malted Milk Company, Slough, Bucks, who will always do their best to give any information which may be required. FILOMENA.

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If you want to make the
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take a real pleasure in having it as their
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all, it completely cleanses and purifies
the skin, and preserves its youthful
bloom unimpaired. This efficacy arises
from the fact that **PEARS** is all pure
soap of the very highest quality.



A COMPOSER, when limited to the resources of one instrument, cannot throw into a composition that wealth of tonal colouring that his work may demand; and so, to give full rein to his conceptions, he has recourse to the orchestra. Such music can, of course, be adapted to the piano and to the organ; but this very adaptation spells curtailment, and

much of the original beauty of the composition is lost. A great deal of the original score has to be eliminated to bring the composition within the compass of the human fingers, and the full tone-colour cannot, of course, be obtained on a single-toned instrument such as the piano.

Since the introduction of the Æolian Orchestrelle the proper rendering of orchestral music has been within the scope of the individual. The Æolian Orchestrelle represents in one compact instrument the tonal effects of a complete orchestra, and admits of anyone artistically playing and interpreting the finest and most complicated orchestral scores.



The Æolian Orchestrelle is played pneumatically by means of music-rolls. Every note is sounded infallibly, but the orchestration and expression of the music lie completely at the control of the performer, who imparts them through stops which control registers voiced to faithfully represent the tones of the different orchestral instruments.

Thus one is enabled to conduct an orchestra in one's own home, and all the great musical works are available to be fully interpreted.

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An illustrated and detailed description is given in Catalogue '5.'



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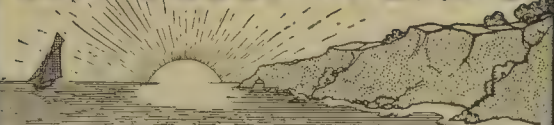
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ART NOTES.

THE theft of "Mona Lisa" is, for all its preposterousness, a fitting sequel to the story of the greater part of Da Vinci's work. The things to which he had put his hand disappeared even in his lifetime, and all through the centuries they disappeared. They have disappeared, not, in most cases, through neglect or the disregard of their value, but because they have always been too eagerly watched and cared for. "Mona Lisa" might still be in the Louvre if it had not been named as one of the three most valuable pictures in the world; and some portions of "The Last Supper" might still remain for us exactly as Leonardo left them, if restoration and repainting had not been so industriously employed in the hope of keeping the precious work in good, presentable condition.



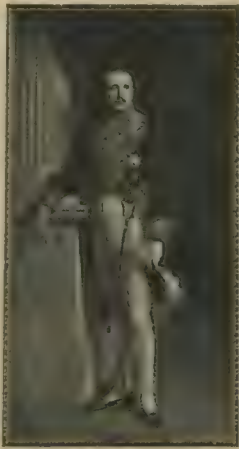
The CENTENARY OF STEAM NAVIGATION: THE COLUMN FOR THE STATUE OF HENRY HUDSON (OPPOSITE).

The height of the column, 100 feet, commemorates the centenary of steam navigation. The hill itself being 200 feet high, the total height of 300 feet represents the tercentenary of Henry Hudson's voyage up the Hudson.

Vasari is full of descriptions of works by Da Vinci that have been since lost or destroyed. In his youth Leonardo "executed, in clay, some heads of women that are smiling, of which casts in plaster are still taken, and likewise some heads of boys which possess all the appearance of having come from the hand of a master." Boys and smiling women are all lost, and not even the plaster casts remain, though Berlin, it is true, has a wax. The painted buckler of Vasari's anecdote is gone; the picture of the glass of flowers is gone; the drawing of Neptune, "which seemed wholly alive," is gone; the Medusa head, known to have been in Duke Cosimo the First's *Guardaroba* in 1553, is gone; the *Sforza* horse is gone. On the horse, says Sabba da Castiglione, "he consumed sixteen consecutive years; and assuredly the dignity of the work was such that he cannot be said to have lost his time and labour."

But now time and labour and the horse are lost, save in so far as their value lives in tradition. The portrait of a Florentine lady, done at the instance of Giuliano de' Medici, is gone; the "Battle of Anghiari" is gone, and many works once given to him are now ascribed to Beltraccio; "The Last Supper," which began to flake off the walls at the end of the sixteenth century, and was then described as "utterly ruined," has gone too, with the aid of restorations in 1726, 1770, and at a recent date. Two weeks ago "Mona Lisa" also went.

Leonardo would still remain if all his works were gone. "The Last Supper" is sought every year by thousands of people determined to see one of the central works of Italian art, and thousands of people will continue to seek it despite the assurances of the



A TRIBUTE TO A DISTINGUISHED BRITISH DIPLOMATIST: THE PORTRAIT OF SIR WALTER TOWNLEY PRESENTED TO HIM AND LADY SUSAN TOWNLEY BY THE BRITISH COMMUNITY AT BUENOS AIRES. The portrait which is here reproduced is the work of the famous painter Mr. Philip A. Laszlo. It is a presentation to Sir Walter and Lady Susan Townley by the British Community at Buenos Aires, in recognition of Sir Walter Townley's services as British Minister to the Argentine Republic, a post to which he was appointed in 1906 and which he has filled to the great satisfaction of all.

in width. Only French civil and military aviators will be allowed to compete.

Whilst most of Europe has been suffering under heat-waves, thousands have enjoyed the cool, refreshing air of the famous health resort, St. Moritz. The number of visitors was recently estimated at over five thousand, among them H.H. Max von Baden (nephew of the late Grand Duke Friedrich, who for thirty summers visited St. Moritz) and Prince Adalbert of Prussia. The sports season is now at its height. After the golf tournaments for the Championship of the Engadine, there will take place the competition for the Championship of Switzerland and Central Europe. Lawn-tennis, football matches, rowing and sailing regattas, and climbing, all bring the greatest variety into the life of St. Moritz.

learned that the touch of Leonardo's own hand is nowhere to be found on it. Let the authorities at the Louvre, if they do not recover their masterpiece, leave the space once filled by "Mona Lisa" for ever vacant.

It will serve almost as well, for the picture is too well established in literature to be forgotten. A panel can be stolen, but a tradition cannot. And among generations of critics ravenous for new sensations, Da Vinci's fame may be even safer in the keeping of the poets and historians than in his actual achievement. Had all Raphael's works been burnt before 1850 his supremacy would never have been questioned. Tagliani, in report, remains the greatest of all dancers; and Rachel is fiercely and for ever alive in the pages of "Villette." But what if they appeared to - morrow at the Coliseum?

E. M.

Messrs. Michelin are offering 150,000 francs for four prizes, called the "Michelin Aero-Target Prizes." A prize of 50,000 francs will be given to the aviator who, in a single flight on or before Aug. 15, 1912, shall have dropped the greatest number of projectiles into a circle having a radius of ten metres. The aviator must fly at a minimum altitude of 200 metres, and drop singly five projectiles, each weighing at least 20 kilogrammes, while passing several times over the mark. Another prize of 25,000 francs will be given to the aviator who, flying at a minimum height of 1000 metres, shall have dropped his projectiles within a rectangle 100 metres in length and 10 metres



Photo, supplied by Rudolph de Cordova. THE TERCENTENARY OF HENRY HUDSON'S VOYAGE UP THE HUDSON: THE STATUE TO BE ERRECTED ON SPUYTEN DUYVILL HILL. This statue of Henry Hudson, by Karl Bitter, is to be placed on the top of the column shown in the other photograph, on Spuyten Duyvill Hill, overlooking the Hudson River. The memorial is connected with the Hudson-Fulton celebrations.

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WILLS AND BEQUESTS.

THE will (dated May 10, 1907) of MISS ELLEN BURMESTER, of 13, Sussex Square, Hyde Park, who died on July 8, has been proved, the value of the property amounting to £94,852. She gives £2000 to the London City Mission; £2000 to the Mission to Deep Sea Fishermen; £1000 to the Reformatory and Refuge Union; £1000 and jewels to the B. and F.B.S.; £500 each to the Infant Orphan Asylum, the Earlwood Asylum for Idiots, the Royal Hospital for Incurables, the Royal Free Hospital, the London Ophthalmic Hospital, the British Home for Incurables, the Royal Asylum of St. Anne's Society, the Life-boat Institution, London Missionary Society, Church Missionary Society, and the Religious Tract Society; £250 each to the Hospital for Sick Children, Great Ormond Street, the Marylebone Home for Incurables, St. Marylebone Charity Schools for Girls, the Home for Crippled Girls, Marylebone, the Royal Sea-Bathing Infirmary, Margate, the Railway Benevolent Institution, the Metropolitan and City Police Orphanage, and the Society for the Propagation of the Gospel among the Jews; and, on the decease of Mrs. Edith Hamilton, £2000 each to the Midway Conference Hall and Dr. Barnardo's Homes, and £1000 to Miss Weston's Sailors' Homes, Portsmouth. The ultimate residue is to be divided between the Young Men's and Young Women's Christian Associations.

The will of LADY RUSSELL, widow of Sir Peter Nicol Russell, of 2, Great Cumberland Place, W., who died on July 2, is now proved, the value of the estate amounting to £176,950. She bequeathed £10,000 each to Dr. Barnardo's Homes and the Salvation Army; £5000 to the Church Army; £3000 to Miss Weston's Home for Sailors; £2000 to the Governesses' Benevolent Institution; £1000 each to the British and Foreign Bible Society, the Indigent Blind Visiting Society, the Society for Organising Charitable Relief, the Merchant Seamen's Orphan Asylum, the Shipwrecked Fishermen and Mariners' Benevolent Society, the Missions to Seamen, and the Society for Providing Homes for Waifs and Strays; £10,000, in trust, for her sister Jessie Deane; £5000, in trust, for her nephew Alexander O. Lorimer; £5000 to the children of her sister Elizabeth Dalziel; £7000, in trust, for her brother Alexander Lorimer; £3000 to Dora Russell; £600 per annum to her maid; and other legacies. The residue is to be divided between her sister Mrs. Deane, Dr. Barnardo's Homes, and the Church Army.

The will and codicils of CAPTAIN VERE HENRY CLOSE, of the Oriental Club, Hanover Square, and Weedon, Northampton, who died on July 3, are proved by Dillon Ross Lewin Lowe and Thomas William Thornton, the value of the estate being £83,577. The testator gives £3000 to Thomas W. Thornton and £5000 to his wife; £1000 each to his cousin Sir Vere Isham and his wife Millicent; £500 each to Violet and Rosamond Thornton; £2000 to Colonel George Philips; £300 to Mrs. Gertrude Mumford; £500 to Dillon R. L. Lowe; £100 each to Sir Edmund Stracey Hardinge, Bt.,

and Sir Richard Robinson, Bt.; legacies to servants; and the residue to his sister Mrs. Sophia Caroline Bridgeman.

The will and codicil of MR. WILLIAM GRACIE, of Holly Road, Fairfield, Liverpool, formerly head of Gracie, Beazley, and Co., shipowners, have been proved, and the value of the estate sworn at £154,449. He gives £500 to his sister, Jane Dobbie Milligan; £650 to Robert Gracie; £250 to Sarah Anne Alcock; £100 to Oswald Stanhope; and legacies to executors, nieces, and servants. The residue is to be held, in trust, to pay the income to his wife for life or widowhood, or an annuity of £500 should she remarry, and subject thereto for his children.

The following important wills have been proved—
Lieutenant-Colonel Henry Edward Stirling Home-Drummond, Blair Drummond and Ardcho, Perthshire . . . £308,898
Mr. Edward Booth Woodhead, Trafford House, Edgerton, Huddersfield . . . £70,253
Mr. Thomas Henry Brockbank, Klandallah, St. Bees, Cumberland . . . £66,757
Mr. William Henry Parsons, Hasbro, Torquay . . . £54,700

CHESS.

TO CORRESPONDENTS.—Communications for this department should be addressed to the Chess Editor, Milford Lane, Strand, W.C.

HAR NARAJAN DIAS (Shamechuran, P.O., Punjab).—We thank you for the position you have sent us, but in the absence of your solution we are unable to verify its accuracy. In any case, however, owing to our limited space, we could not publish it. It would be more suitable for a chess magazine.

H. W. C. (Bristol).—You are probably right, but if mistakes were not made what a lot of drawn games would have to be published!
H. R. THOMPSON.—No. 1 is palpably wrong by 1. Kt to B 3rd. No. 2 is marked for insertion.

PROBLEM No. 3512.—By H. R. THOMPSON.
BLACK.



WHITE.

White to play, and mate in three moves

CORRECT SOLUTION OF PROBLEM No. 3502 received from P. F. Staunton (Kolar Gold Fields, S. India); of No. 3503 from Roper S. Agar (Tala-wakelle, Ceylon) and P. F. Staunton; of No. 3504 from C. A. M. (Penang), Roper S. Agar, P. F. Staunton, and F. Hanstein (Natal); of No. 3507 from R. H. Cooper (Malbone, Ga., U.S.A.) and T. Roberts (Hackney); of No. 3508 from T. Roberts, C. Harrold (Madrid), and J. B. Camara (Madeira); of No. 3509 from J. S. Wesley (Exeter), Rev. G. E. Money, W. Winter (Medstead), J. C. Stachhouse (Torquay), A. W. Hamilton Gell (Exeter), Arthur Taule (Helsingfors, Finland), Scrubb's Ammonia, and F. Harrison.

CORRECT SOLUTIONS OF PROBLEM No. 3510 received from W. H. Taylor (Westcliff-on-Sea), E. J. Winter-sod (Paisnton), Major Buckley (Incton), Horward, T. S. K. (Lincoln's Inn), R. Winters (Canterbury), H. R. Thompson, J. Churcher (Southampton), J. Green (Boulogne), J. Cohn (Berlin), J. Carpenter (Edmonton, W. T. (Canterbury), Rev. J. Christie (Redditch), F. R. Gittins (Small Heath), Scrubb's Ammonia, T. R. McClurg (Lisburn), J. C. Stachhouse (Torquay), J. F. G. Pietersen (Kingswinford), A. W. Hamilton Gell, Captain Challice (Great Yarmouth), L. Schlus (Vienna), H. S. Brandreth (Weybridge), G. Stillingfleet Johnson (Seaford), H. J. M. J. Fowler, and J. Summers.

SOLUTION OF PROBLEM No. 3509.—By F. R. GITTINS.

WHITE. BLACK.
1. Kt to B 2nd K to B 5th
2. Kt to R 3rd (ch) K moves
3. Q mates.
If Black play 1. K to K 7th, 2. K to K 7th; if 1. K takes Kt, 2. Q to Q 4th; and if 1. P moves, 2. Q to B 3rd (ch), etc.

CHESS IN SCOTLAND.

Game played in the Championship Tournament of the British Chess Association at Glasgow, between Messrs. J. H. BLACKBURN and J. E. PARRY. (Scotification Defence)

WHITE (Mr. B.) BLACK (Mr. P.)
1. P to K 4th P to Q 4th
2. Kt to Q 5th Q to B 3rd
White is on familiar ground in this opening, which recalls some of the veteran's stirring combats in his prime.

2. P to K Kt 3rd P to K 2nd
3. B to Kt 3rd P to Q 3rd
4. B to Kt and Kt to Q 3rd
5. K to Kt and Kt to Q 3rd
6. P to Q 3rd Kt to B 3rd
7. P to K Kt 3rd Kt to Q 3rd
8. B to B 3rd Q to B 3rd
9. Q to Q 2nd P to Q Kt 3rd
This seems a loss of time, as, indeed, is the whole of the advance on the Queen's wing that follows it. Black has a mistaken sense of the safety of his King's position.

10. P to K Kt 4th P to Q Kt 4th
11. Kt to Q 5th R to Q Kt 4th
12. P to K B 4th P to K R 4th
13. P to Kt 5th Kt to Kt 4th
14. P to K 3rd P to K 4th
15. Kt to B 2nd Kt to K 2nd
16. P to K R 4th P to Kt 5th
17. P to B 4th P to R 4th
18. Castles

Under ordinary circumstances it would be rash to Castle with his Pawn thrown so far forward; but the disposition of the board is such that all White's pieces are gathered round their King, while Black's pieces are mainly posted far away from the fight.

19. P to Kt 3rd P to Kt 3rd
20. Kt to B 3rd P to Kt 3rd
21. Kt to R 3rd P to Kt 3rd
22. P to B 3rd P to Kt 3rd
23. Kt to Kt 3rd P to Kt 3rd
24. Kt to Kt 3rd P to Kt 3rd
25. Kt to Kt 3rd P to Kt 3rd
26. Kt to Kt 3rd P to Kt 3rd
27. Kt to Kt 3rd P to Kt 3rd
28. Q to H 6th (ch) K to Kt 3rd
29. P to B 5th Q to Q 4th

Forced as the alternative of K to R and P to B 5th, P to K 3rd threatens a mate next move.

30. P takes Kt Q takes Q
31. R takes Q R to Kt 5th
32. R takes Q P K R to Q 5th
33. P to K 5th R takes R
34. P takes K P takes P
35. P to H 5th B to K 3rd
36. P to B 6th R to Q 4th
37. B to Q 5th

The prettiness of White's game is maintained to the end.

38. B takes B (ch) R takes P
39. P to B 7th Resigns

Whatever may happen about Home Rule, there is no doubt that Irish whisky will remain a bond of union between "the distressful country" and Great Britain. One of the pleasantest brands of Irish whisky is Corbett's "Three Star" blend, which possesses a distinctive flavour of its own. Those who have not yet tried it should take an early opportunity of testing its excellence.

SUCCESSFUL TREATMENT OF PIMPLES AND BLACKHEADS.

A speedy and economical treatment for disfiguring pimples is the following: Gently smear the face with Cuticura ointment, but do not rub. Wash off the ointment in five minutes with Cuticura soap and hot water, and bathe freely for some minutes. Repeat morning and evening. At other times use hot water and Cuticura soap for bathing the face as often as agreeable. Cuticura soap and ointment are equally successful for itching, burning, scaly and crusted humours, of the skin and scalp, with loss of hair, from infancy to age, usually affording instant relief, when all else fails.

CULLETON'S HERALDIC OFFICE

For Searches and Authentic Information respecting

ARMORIAL BEARINGS and FAMILY DESCENTS. Also for the Artistic Production of Heraldic Painting, Engraving, and Stationery. Interesting Genealogical Pamphlet post free.
92, PICCADILLY, LONDON.
Formerly 21, Cranbourne Street.

Gold Seals, Signet Rings, Desk Seals, Book Plates, Note-paper Dies.

ARMSTRONG'S



Exceptional opportunity for Gun Buyers. Following Guns are Armstrong Best Make, New and Perfect, but slightly shop-soiled. All 12 bore:—
Pair Best Model de Luxe Ejector Side Locks, cost £120, reduced to £70 the pair, or one Gun at £35.
Pair of Light-weight Ejectors, Anson & Deley Action, beautiful Guns, cost £60, reduced to £26 the pair, or one Gun at £26.
Pair of High-grade Ejectors, Handy Game Guns, Anson and Deley Action, cost £80, reduced to £20 the pair, or one Gun at £25.
Fine Ejector, cost £25, price £14.
Small Photo Hammerless Non-Ejector, cost £10, price £5 10s.

Sent on approval at home, or carriage paid abroad.
ARMSTRONG'S SPORTING GUN DEPT.,
115, Northumberland Street.

NEWCASTLE-ON-TYNE.

WINTER-GARDENS
SUN LOUNGES, CONSERVATORIES, VERANDAHS, VINERIES, PEACH, ORCHID, AND CARNATION HOUSES, &c.
The gracefully defined lines, perfect proportion, and sound construction embodied in our Glass-houses give a distinctive character, and add a charming effective finish to any building or grounds.
ILLUSTRATED CATALOGUE SENT FREE ON APPLICATION.
The Sun Lounge Illustrated has recently been erected by us at Margate.
ARCHITECTS' DESIGNS CAREFULLY CARRIED OUT.
BOULTON & PAUL, Ltd. (Horticultural Builders), NORWICH.

Hinde's

Drapers, Stores, Hairdressers, Everywhere. 6d. & 1s. the Box.

Hair Wavers.

Oakey's WELLINGTON Knife Polish

The Original Preparation for Cleaning and Polishing Cutlery, and all Steel, Iron, Brass, and Copper articles. Sold in Cansisters at 3s. 6d., 6s., & 1s. by Grocers, Ironmongers, Oilmen, &c. Wellington Emery and Black Lead Mills, London, S.E.

NUDA VERITAS HAIR RESTORER

Is not a Dye, but the Genuine Restorer; and for over 45 years has never failed to restore Grey or Faded Hair in a few days.

HARMLESS, EFFECTUAL, AND PERMANENT. Circulars and Analysts' Certificate Post Free. Sold by Hairdressers, Chemists, &c., in Cases, 10s. 6d. each. Wholesale Agents: R. HOVENDEN & SONS, Ltd., 29-33, Berners St., W., & 91-95, City Rd., London, E.C.

In Two Sizes—

"STANDARD."

"HEAVY."

"WHY NOT"

The new 2s. Golf Ball.

Uniform from centre to outside. Won't back or go out of shape.

HENLEY'S TELEGRAPH WORKS, Blomfield Street, London, E.C.

Wolsey is splendid!

—splendid in every way; splendid for health and comfort, because all pure wool; splendid for wear, because so thoroughly well-made and finished; splendid for value, because of its quality and of the Guarantee to replace free of cost any Wolsey garment found to shrink.

The all-round excellence of Wolsey has made it by far the most popular brand of underwear in the world. You can't do better than let your next underwear order be for "Wolsey."

Wolsey UNDERWEAR

Never accept as genuine Wolsey any garment which does not bear the Wolsey Head trade-mark shown here.

For ladies there are Wolsey Combinations, Bodices, Vests, Night Dresses, Flannel Blouses, Cashmere Hose, Goggles, &c.

For Men, Wolsey Vests, Pants, Combinations, Belts, Half-Hose, Flannel Shirts and Gloves. There are also a wide variety of Wolsey Goods for Children. Obtainable everywhere.

WOLSEY UNDERWEAR COMPANY, LEICESTER.



THE MAKING OF THE "ILLUSTRATED LONDON NEWS": HOW THE PAPER IS PRODUCED EACH WEEK.



AT A TIME OF GREAT PRESSURE: SPECIAL ARTISTS OF "THE ILLUSTRATED LONDON NEWS" AT WORK
IN ONE OF THE ROOMS OF THE EDITORIAL DEPARTMENT.

At times of exceptional pressure—on the occasion, for instance, of a Coronation or a Royal Funeral—when it is necessary that not a second shall be lost, it is customary to turn the editorial offices, and even the cashier's rooms, into a series of studios, which are full by day and night. Thus there is not a moment's delay between the completion of each drawing and its dispatch to the block-makers for reproduction; the conveyance from artist's house to office is done away with. When such work is in progress a double-page picture may be finished in twelve hours or so, for speed is then more than ever important, and is the thing

most sought so long as it is consistent with the correct and artistic rendering of the event under illustration. In the drawing may be seen the following special artists of "The Illustrated London News": (at the table, on the left, reading from left to right) Mr. S. Begg, Mr. Max Cowper, and Mr. C. J. de Lacy; (at the table, on the right, reading from left to right) Mr. Frédéric de Haenen and Mr. H. W. Koekkoek; (standing in the centre) Mr. R. Caton Woodville; (at the easel in the left foreground) Mr. A. Forestier; (at the easel in the right foreground) Mr. Cyrus Cuneo; and (behind Mr. Cuneo) Mr. Norman Wilkinson.

THE WORK OF THE EDITORIAL STAFF.

It is more than difficult to describe in detail the complex work of the editorial department of a newspaper such as *The Illustrated London News*: it is almost impossible. Briefly, however, it may be said that the editor, being in supreme command of

the editorial staff, is responsible for the contents of each issue, and the manner in which those contents, artistic and literary, are presented to the public. He decides who shall contribute to the pages of the journal week by week, and, what is at least as important, who shall not! This means that the doings of artists, photographers, and writers the world over must be familiar to him, for the best man must be chosen to deal with each particular piece, or form, of news, to comment upon or illustrate each particular subject. Further, it has to be determined, definitely and speedily, precisely what will interest the readers of the paper and what they would pass by with scarcely a glance; and what

supply what is wanted, just as a news agency, such as Reuters, supplies matter to the daily papers. Illustrations may even come by post—unsought, but welcome. In other cases special artists are dispatched to make sketches, which, later, are turned into finished drawings. The process sounds easy; in reality, it is most arduous, for, in the majority of cases, numerous arrows must be shot more or less at a venture. Twenty applications may bring but one response, and possibly not that. Half-a-dozen photographs on a single page may represent many hours' search; one subject is often the result of weeks and months of effort and diplomacy. In the case of wars, reliance is placed upon special artists sent to "the front" by the journal, and upon a chain of casual correspondents upon the scene of action; such events as the recent great strikes call for similar action. Less "newsy" matters are suggested at times by artists or other contributors, at times by the editorial staff, part of whose business it is to balance strict news in the paper and affairs of a more general nature.

The illustration or illustrations having been procured, and, perchance, having been subjected to editorial criticism, and received the alterations consequent upon this, the size to which they are to be reduced or enlarged for publication is decided, together with the position each shall occupy if the page be composed of several

'flag-wagging' and heliographing in the daytime, and by means of lamps at night. The most remarkable of the improvised signal-stations was at the top of the Dome of St. Paul's, the men working in the Golden Gallery. The Cathedral, it may be remarked, occupies the highest point in the City, and the dome made, of course, an excellent signalling-station."

This expansion is in accordance with the staff's belief that each illustration should be "self-contained," should convey its message to the reader without his having to refer to another part of the paper also, and the rule is seldom broken. The descriptive lines are dictated to a typist, who types them as they are spoken—that is to say, does not first write them in shorthand; so the time taken by the transcription from the note-book is saved. A glance through the typewritten sheet, a few necessary corrections—the alteration, perhaps, of a phrase—and the "line" is sent upstairs to the composing department,



IN THE EDITOR'S ROOM: A SPECIAL ARTIST'S DRAWING IS BROUGHT IN FOR CRITICISM.

space it is politic to devote to each item—one small illustration or a dozen, a single page or five or six, a column, an inch, a paragraph or a descriptive line under the reproduction. In other words, every drawing, every photograph, every line of "copy" which is published each week is the direct result of editorial watchfulness, of the observation of developments of all branches of life, of an intimate touch with affairs, of careful testing of artists, photographers, authors, and journalists, of searching the ends of the earth for material, of negotiations prolonged and expert, of much "weeding-out" of material submitted for consideration, of telephoning, telegraphing, letter-writing, and special-messenger-dispatching.

Thus, it will be seen, the responsibilities of the editor and the editorial staff are great. Upon their "handling" of their duties depends the popularity of the paper, the increase of circulation which comes with numbers which please, the advertisements which follow increased circulation. Upon them, too, falls the most onerous task of avoiding error in statement or illustration; and before them always is the knowledge that the smallest slip may mean, at least, considerable unpleasantness; at worst, a libel action.

Now, as to methods. It is decided that a piece of news must be dealt with. The first thing is to obtain the requisite illustrations. These are sought by telephone message, telegram, letter, or personal call; or it may be that one of the press photographers is able to

subjects. At the same time, an appropriate border is chosen for each page, or, as it generally happens, is designed specially for it according to the ideas of the editor. The photographs and drawings are then carefully measured up, so that they may be made to fit the space kept for them to a tiny fraction of an inch, and are sent, in company with the fullest instructions, to the block-maker, who is to reproduce them on metal for the printer.

Immediately before each illustration leaves the office for this purpose, rough notes are made of the subject, and of any particularly striking features. These form the basis of the descriptive lines which are published under them, and are written while the blocks are being made. A note of this kind will probably take some such shape as the following: "Railway Strike. Koekkoek page. Signalling (Military) from Dome St. Paul's, Golden Gallery." This, expanded for the printer, would come to—

"ON THE HIGHEST SITE IN THE CITY: SIGNALLING FROM ST. PAUL'S DOME. THE GOLDEN GALLERY OF THE CATHEDRAL OCCUPIED BY SOLDIERS: 'FLAGGING' MESSAGES TO THE TROOPS STATIONED IN LONDON DURING THE STRIKE.

Communication was kept up between the various detachments of troops on strike duty in London chiefly by means of telephone and telegraph; but, realising the possibility of a breakdown in these services, the military authorities established also a chain of signallers, who conveyed orders from point to point by means of

where there has already been received a dummy "make-up" of each page showing the sizes and the positions of blocks. The "line" is then set to fit the block. Meantime, "copy" other than this has been received from contributors, read for the detection of faults, cut, if necessary, to fit the space for which it is intended, and given into the compositors' hands for setting into type. Later, proofs begin to flow from "upstairs" to the editorial rooms. These have been read by most capable "readers," to give the correctors of the press their more common name, but must be read again by sub-editor or assistant-editor, or both, and finally passed by the editor. It is at this time that statements must be verified, opinions modified if they seem over-pungent, errors corrected; lines balanced, matter made to fit allotted spaces by "cuts" or additions; while careful watch is made also to secure that the correct line is placed under each block—not so easy a matter as it would seem when, for example, two or three pages contain a large number of portraits. Then, the pages, having taken concrete form, pass to foundry. Later their order in the paper is settled; and the special inks are chosen for those that are to be printed in colour. And so to the machines.

The editorial staff also are responsible, of course, for all Special and Record Numbers of *The Illustrated London News* (which mean much additional thought and labour, and a good deal of night work added to that of the day), and for the issues of *The Sketch*.

SETTING THE "COPY," & ARRANGING FOR THE PRESS.



GUTENBERG, 1400-1468

the compositors, adding his instructions as to size of type and general style. Whatever comes from the Editor in the shape of such material, be it poetry or prose, hand-written or typewritten, beautifully inscribed in ink or scrawled in pencil, it is known henceforth by the all-descriptive, if curt, term of "copy." The present notes were offered to the long-suffering compositor in pencil, on thin "copy" paper.

Copy may be set up into type by hand or by machine. The latter method gains very materially in regard to speed, but the former is indispensable for much of the setting—in fact, for all beyond mere straight-line work. On the machines a keyboard operator actuates the setting-mechanism in much the same fashion as the typist deftly spells out the words at her machine. The general principle of letterpress-printing is thus best explained by a reference to hand-composition, for, after all, the machine or mechanical setter simply imitates the work of the hand type-setter. In each instance the aim is to put the matter into metal type to be printed from.

THE METHOD OF THE COMPOSITOR.
Watch the compositor at work. He takes up a metal or wooden hand-case,

WHEN the Editorial Department has finally prepared the material for the articles to appear in these pages, the matter itself is handed over to the head of the composing department, who arranges it in suitable sections to give to

and authors, that of the long, narrow "galley slip."

IN THE READING DEPARTMENT.

Such slips are sent to one of the correctors of the press, known by the brief term of "reader," who places "copy" and proof side by side, making comparison word for word, and marking in the margins, in the hieroglyphics understood by printers the world over, any corrections to be made. (An example of this operation is shown below.) The proof is then returned to the compositor in order that the corrections can be done. At this stage the class of "copy" given very largely determines the success of the work of the compositor, whose great desire is to have a clean proof—i.e., as few corrections as possible. Some manuscript can

a clever maker-up into page form, including the blocks from which illustrations are printed. This work is usually entrusted to highly skilled men, under expert supervision. Regard has to be paid to the most effective arrangement of illustrations and type, in order to secure the best result. Close attention is given to this part of the work at the I.L.N., and no effort



CANTON, 1422-1491

is spared to present the pages in the most symmetrical and pleasing aspect.

The built-up page is now put on the "stone," a flat, metal-topped table, so called because, instead of metal, stone was formerly used. An iron frame, or "chase," is placed round the type, and the whole is firmly tightened by an ingenious system of "interlocking furniture," so that it can be lifted in one piece. A rare catastrophe in a composing room is when such a page or frame, for various reasons, falls out; the chaotic result is the proverbial "printer's pie." It is then taken to the foundry, in order to be cast. Finally the electrotyped pages are "imposed," or arranged in chases or on boards for the machines.

"DISPLAYED" ADVERTISEMENTS.

Reference to the advertisement pages of this paper will reveal how something vastly different from ordinary straight-line setting is also in regular operation. These "displayed" pages demand great skill in designing advertisements to advantage, and more or less

AT THE SIGN OF ST. PAUL'S.

BY ANDREW LANG.

Copy. "Go and see what baby is doing and tell him he mustn't," says a little girl in a back number of Mr. Punch's popular miscellany. A great many critics act on the principle which the little girl constructed on the model, doubtless, of the methods of her dear mamma. Reviewers constantly, when they find out what a man of letters is doing, tell him that he must desert; not only that, but they tell him what he must do.

val. I have observed lately two instances of the pleasant practice of the reviewer, and they came very agreeably into my way. An American scholar had devoted no less than forty pages of a learned magazine to a demolition of views as to the arm of armour that was worn by Homer's heroes.

in. He began by accusing me of wishing to transfer the trial of this rather obscure question from a court of experts to the bar of "popular judgment," and of the English-speaking public at large.

val. Now, I ask you, what is the name of the Ashmolean Museum? does the great English-speaking public know or care about whether Agamemnon wore a breast-plate and bronze leg-guards, or whether he fought as naked as Achilles in the statue dedicated by the women of England to the glory of Arthur, Duke of Wellington?

val. Of course popular judgment is a judgment to which no sane man would appeal in such a subject as this of the armour.

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PROOF-CORRECTION: A "FIRST PROOF" AND ITS "REVISE."

A necessary auxiliary of the Composing Department is the Reading Room, which concerns itself with those airy trifles known as "printer's errors." Its operations can be described briefly. When an article (or advertisement) has been set by the compositor, a slip-proof is taken to the corrector, or "reader," who compares it with the "copy" and marks the typographical errors of omission and commission, as well as any doubtful point of fact or grammar in the subject-matter. This "first proof" is then corrected by the compositor and returned to the reader, with a "revise," for further examination. All obvious mistakes having been removed, the proof is submitted to the Editor or writer before the type is made up into page form. It is then subjected to a final "reading" and passed for press.

only be described as "fearful and wonderful," and, experienced as the type-setter is in deciphering all classes of writing, he has much to suffer in this direction. The lot of compositor and reader alike is not an enviable one when we remember that writers for the press are invariably called upon to produce



WHERE THE "COPY" IS SET UP INTO TYPE: A CORNER OF THE COMPOSING ROOM. Showing one of the cabinets containing varied cases of type ready to be drawn upon when required.

termed a "stick," arranges it to take a certain width of line, corresponding, say, to the column of *The Illustrated London News*, goes to a stand or "frame" holding in a sloping position a pair of cases of type, each letter in which possesses a separate box. Thus, all the a's are in the a box, the b's in the b box, and so on. He lifts the letters into the stick until a complete line is nearly set, and then divides the words evenly by using different sizes of spaces. Line after line is formed, until the stick holds as much as convenient, and this is deftly lifted on to a galley, a long narrow receptacle designed to hold type thus set in line. When the whole of the article is thus set (a number of men share the same article between them in order to save time) the lines are fastened at end and side so as to have no movement in the galley, and carried to a press, on which a proof is taken. This is in the shape so familiar to writers



SETTING THE ARTICLES AND DESCRIPTIVE CUT-LINES AND THE ADVERTISEMENTS, AND MAKING THEM UP INTO PAGES: IN THE CHIEF COMPOSING ROOM.

The compositors set the type from the cases on the frames arranged around the walls. In the middle of the room are the "stones," or imposing-tables, on which pages are corrected and prepared for the Foundry, and the frames imposed for the machines.

"copy" in a hurry, and some of the results are not exactly copperplate. In this and in the after operations the same procedure is followed, whether the type is hand-set or machine-set.

MAKING UP.

When all proofs are corrected and "revises" submitted, the various galleys of type are arranged by

well arranged for quick work and easy reference to all material. The frames on which the cases of type in use stand form alleys around the walls, the tables or stones are in the centre, and the innumerable cabinets with the stores of type and other material are seen in the frames themselves, and in the storage accommodation at the end of the room. Ample light and air space make this a splendid room for those working in it and for its purpose.



WITH THE "RANDOM" IN THE FOREGROUND: PART OF THE COMPOSING ROOM. In the foreground is shown the "random" or "dropped" newly set type is "dropped" on to galleys.

ornamental type of different styles is drawn upon for this purpose. *The Illustrated London News* composing room is particularly well equipped for the display of attractive and striking advertisement pages. Its resources include over five hundred different sets of "faces" ready to be utilised. Their proper selection affords harmony and pleasing appearance to the announcement, whilst appropriate style of arrangement and variety at all times is further ensured.

This composing room is wonderful.

THE MAKING OF THE PROCESS BLOCKS

THE PHOTOGRAPHING OF THE ORIGINAL PICTURE THROUGH A RULED SCREEN, WHICH BREAKS IT UP (IN THE PHOTOGRAPH) INTO INNUMERABLE DOTS OF VARYING SIZES.

The first illustration shows a ruled screen. Two of these are cemented together face to face, so that the rules form squares. Through this composite screen (illustration 2) the picture to be reproduced is photographed, and so broken up into sections represented by dots of varying sizes.

THE reproduction by

photo-engraving of pictorial subjects for printing purposes has to-day attained a remarkably high standard. For some fifteen years past the firm of Lascelles and Co., Ltd., has been identified with *The Illustrated London News* and *Sketch* and the supply of blocks for the illustration of their pages; and, as the Lascelles Studios reflect the latest and best methods of photo-engraving, some reference to them may be of interest to the general reader and to picture-lovers in particular.

The process, as shown in operation at the beautifully situated premises occupied by them at Willesden Green, is a particularly interesting one.

The picture to be reproduced is first taken to the camera-room, for photography is the basis of all the so-called mechanical processes which come under the general description of photo-engraving. Great cameras fixed on frames allowing of movement to and fro are ranged about the room, facing the copy-boards to which the originals are attached. Drawings and photographs, for instance, are usually made much larger than the reproductions required, but the camera reproduces the same size, or smaller or larger, with equal facility.

But this is not ordinary photography. It is necessary ultimately to provide a metal surface for the printer, which is made up of innumerable exceedingly fine points or dots. Examine the pictures on this page with a magnifying-glass, and note how an entire picture is a



THE BACK OF THE PROCESS-BLOCK MAKER'S CAMERA, SHOWING THE SCREEN ILLUSTRATED ABOVE IN PLACE IN ITS FOCUSING GEAR

In this manner the photograph of the picture to be reproduced is taken through the ruled screen, and so broken up into dots.

mean so much to the finished picture. Skilled engravers are employed for this work, and they are seen stopping out and re-etching daintily with camel's-hair brushes until satisfied that the brilliancy of the original has been faithfully rendered. The "fine etching" may be regarded as making all the difference between the very ordinary and everyday work and what may be regarded as genuinely pictorial production. The interpretation of gradations of light and shade depends upon the skill of the artist-etcher, and the Lascelles Studios are particularly successful in this respect.

The line borders and designs are made in a similar way, but with the following exceptions: When the lines in the design are intended to be solid black the screen is removed from the camera, the negative then being taken in the ordinary way; when it is intended to make the design grey (an example of this is the above heading), a single line screen is used in the camera, or one of the lines is cut out of the screen by a diagonal slit stop placed in the lens for that purpose. The negative thus produced has black lines running through it diagonally which print on the paper white, and produce a grey effect. The line borders are etched considerably deeper than the pictorial process plate, and the work is done in a separate department.

To follow the plate further. It is now carried to the proof-press, where impressions are taken for the final test. But, to be of use to the actual printer, the plate must be mounted on a wood base in order to make the

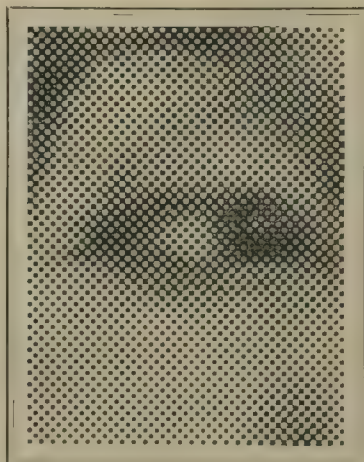


1. THE NEGATIVE MADE BY PHOTOGRAPHING THE PICTURE TO BE REPRODUCED THROUGH THE RULED SCREEN—A MASS OF DOTS OF VARYING SIZES; 2. A PRINT FROM THE NEGATIVE ON A COPPER PLATE; 3. AN IMPRESSION FROM THE COPPER PLATE AFTER THE FIRST ETCHING; 4. AN IMPRESSION FROM THE COPPER PLATE AFTER THE SECOND ETCHING; 5. AN IMPRESSION FROM THE COPPER PLATE AFTER THE ETCHING HAS BEEN COMPLETED—IN FACT, AN IMPRESSION FROM THE FINISHED PROCESS BLOCK.

veritable network of dots and lines. This effect is produced by introducing a "screen" in the camera, so that the light falls through it on to the negative. The screen consists of two thin plates of glass, on the surface of which very delicate parallel lines are ruled, filled in with an opaque pigment. When these two plates are cemented together, the parallel lines intersect each other at right angles. The finer the screen the more numerous the dots. Screens vary all the way from, say, 80 to 250 dots to the square inch. Most of those used for the illustrations on this page are 133 to the inch.

Having obtained such a negative, this is taken to one of the "printing" rooms. The glass negative is placed in a frame in close contact with a highly finished and polished copper plate of about $\frac{1}{16}$ in. in thickness, previously sensitised, the whole placed in front of a powerful electric light. The use of this light renders printing quite independent of climatic conditions, although suitable sunlight will furnish a similar result. The light shines through the transparent dots of the negative, and hardens the sensitised surface of the plate. After printing, washing removes the parts not acted upon by the light, and intense heat is then applied to harden it and prepare for etching.

Thus bearing the picture, it is squared up and backed with an acid resist. It is then deposited in one of the large porcelain baths in the etching department. These rock automatically and maintain the etching fluid in constant motion. The experience of the etcher controls the time of preparation, and the fine etcher is responsible for the little touches and additions here and there which



ONE OF THE EYES IN THE PORTRAIT MUCH ENLARGED TO SHOW HOW THE PHOTOGRAPH IS BROKEN UP INTO DOTS BY THE SCREEN.

whole equal to the height of type—about the depth of a shilling placed sideways. Thus it goes, carefully tended, to the mounting-department. Here is quite an array of clever mechanical appliances, and all operated to a degree of nicety which is a marvel to the "layman" in things photo-mechanical. The pictorial plate is first put on a lining beveller. This machine carries graver arms on a revolving turret, and is capable of ruling border lines of any thickness or number; it also has a revolving cutter for bevelling the plates for the purpose of mounting them upon the wood. A "router" is used, revolving at many thousand revolutions per minute, for clearing away large spaces of white, and a band-saw to cut away superfluous margins. Even then machines come into play, trimming the mount to proper height and smoothing sides and back.

The method of half-tone engraving referred to is in everyday use at the Lascelles establishment. But the works are prominent in other modern processes of illustrations, such as colour-plate making and dainty photo-gravure work.

A feature of the photo-engraving business connected with periodical publications is the "rush" which must necessarily be coped with. The originals are apt to come in at the last moment, so that the engraver must handle delicate and complicated processes at high pressure. It is thus greatly to his credit that the blocks for the printer are so satisfactorily finished.

The illustrations in this number are examples of work all turned out quickly, but with the care and accuracy which alone give satisfactory results.

MAKING DUPLICATES OF TYPE AND ILLUSTRATIONS, AND CURVING THEM:

TWO MOST IMPORTANT PROCESSES IN "THE ILLUSTRATED LONDON NEWS" FOUNDRY.



MAKING DUPLICATES OF THE TYPE AND ILLUSTRATIONS: ELECTROTYPING.

This photograph shows a row of baths containing a solution which electrically deposits copper on to the wax mould, to provide exact facsimiles in that metal of the type and the illustrations. The operator is shown raising a mould in course of "growth."



BENDING THE PLATES FOR THE CYLINDERS OF THE ROTARY PRINTING-MACHINES: IN THE FOUNDRY.

This Illustration shows bending appliances for shaping plates to fit the curved cylinders of the printing-machines. To the left is a powerful press into which the flat plate is placed, to emerge in curved form. Taken in turn to the hot press and cold press to the right, the plate thus curved is perfected in shape. The "shapes" to the right foreground are used for testing the curved plates.

THE MULTIPLICATION OF TYPE AND ILLUSTRATIONS.

WHEN the type has been set and is otherwise quite out of the hands of the Composing Department, it is by no means ready for printing from. The type and the blocks are all duplicated, and the duplicates thus made are sent to the machine-rooms, the type formes being then returned to the Composing Department to be distributed, the material from which they are made up being thus available for use over and over again. The enormous editions to be printed would wear down the type very soon, and require constant and costly renewals.

The method of duplication is that of electrotyping, this being very similar on general lines to the usual electroplating process. To attain, however, the pitch of excellence, the finish, the exactitude, and the certainty demanded by the printing process, the Electrotyping Department must be provided with a specially devised plant peculiar to the business. The *Illustrated London News* Foundry occupies a floor of considerable dimensions, every corner of which is utilised. Electricity is not only used for depositing copper and nickel in the electrotyping baths, but is everywhere drawn upon for driving purposes. There are motors on the floor, on brackets, and on the ceiling, as found most convenient, and these are so arranged that, as frequently happens, one section only of the work can be continued without in any way setting the whole department in operation and wasting unnecessary driving-power, whilst in the case of breakdown a reserve is always ready. The more one learns of publication-printing the more one is impressed with the imperative necessity of being always ready for contingencies. There is a dynamo operating the great baths wherein the moulds are being grown over or coated with the layers of copper or nickel steel. These are of very large capacity, and run in series with the aid of every useful adjunct which modern skill can offer, including a powerful motor-generator and reserve batteries.

An impression of the forme is taken in wax by means of a powerful Hoe hydraulic press, the wax being blacklead to prevent sticking to the metal. The mould thus obtained is suitably finished, and then taken to one of the electrical deposition-baths, in which it is hung until a thin coating of nickel steel, followed by a coating of copper, is deposited, making an exact facsimile of the face of the mould. The older and less speedy method of "floating" the formes is abolished, high spaces and metal being utilised.

When this mould is taken from the bath and the electrically deposited coating removed, the latter is taken to the "backing-up pans"—a triple set being in use. The electro shell is there equipped with a solid metal backing, but is by no means even then ready for the printing-machine. Quite a battery of mechanical devices is now drawn upon. There is a planer for shaving backs and sides; there are routers for cutting out superfluous metal at the face, there are

shooting planes and saw-tables—all cutting wood or metal with equal facility—supplied by R. Hoe and Co.

The plates must be curved to fit the cylinders of the rotary machines, and for this purpose the Cottrell series of appliances is utilised. First the plate is run through a bending-machine, consisting of a flat bed with heavy steel-band-bearing cylinder. The plate goes in flat and comes out curved; but dead accuracy is necessary, and the curved plate is then transferred to a hot press for a moment, and next quickly to a cold press. This fixes the shape.

It should be remarked that the plant of this department, taken as a whole, has a very exceptional output, an obvious advantage in ordinary times, and in hours of stress invaluable. In a working day some two hundred pages of *The Illustrated London News* and the *Sketch* can be turned out in the foundry. Thus it is possible to "feed" the many machines with great

There must be few, if any, to equal it throughout the country.

ELECTRICAL DRIVING.

Perhaps most important of all the recent alterations which have been made in the change from the older style to the present model office, is that of the adoption of electrical driving. The complete reorganisation of the works is surely nowhere more successful than in this direction. More wonderful still is the fact that the transformation was so effected that regular work was continued and no stoppage whatever resulted. The couple of horizontal compound engines and the old beam engines have gone entirely, together with their boilers, and the space they occupied provides a much-needed extension of accommodation for machines, as indicated by the switchboard. The whole premises are lighted and the machines driven by electricity, a very complete installation being arranged. Power is obtained from the mains of two separate companies, supplied alternately from one of the two, a week at a time; but in case of emergency, both sections may be drawn upon.

The machines are driven variously, according to their make, various sizes of motors being utilised. All the machines have "push-button control"—that is, push-buttons are placed on each machine, so that control may be exerted at more than one place—with obvious advantages. Some of the motors are tucked away at the rear of the machines; others are on brackets on the walls.

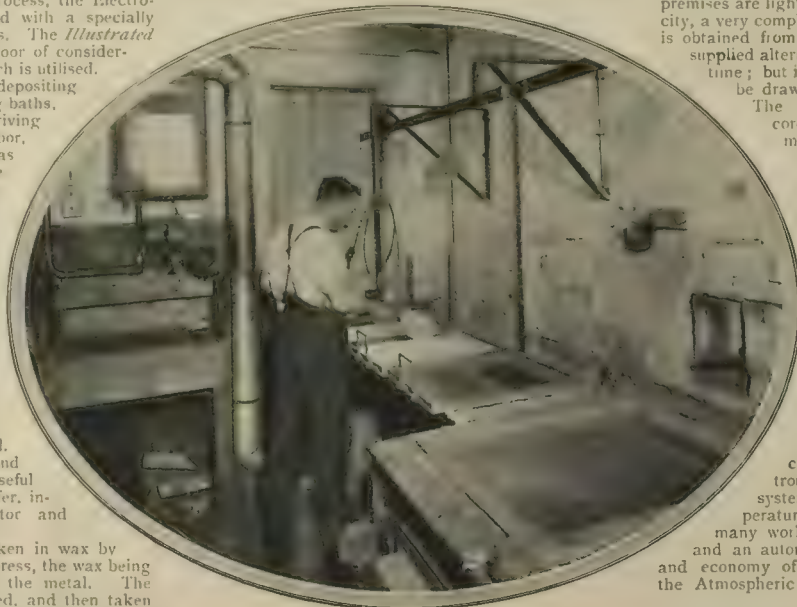
THE HEATING OF THE PREMISES

is obtained by what is known as the "Beck" system of low-pressure water apparatus. Each room or department has its own set of radiators, to be opened or shut as required, and thus every part of the works may be maintained at one uniform heat. Compared with the cost, the dust and dirt, and the trouble of coal fires or gas stoves, this system possesses great advantages. Temperature is raised quickly throughout the many work-rooms, effective control is ensured, and an automatic regulator provides safety in use and economy of fuel. The system is installed by the Atmospheric Steam Heating Company, Ltd.

FIRE!

More particularly in passing up and down the stairs are we constantly brought face to face with the ever-handy provision made against fire. A fireman is on duty day and night, and, under his control, workpeople have each their allotted duties in case of emergency. Hose-pipes and stands are placed on the stair-landings, and all maintained ready for instant use.

But danger from fire is minimised very considerably by the adoption of electric lighting and electric driving, with the consequent absence of openings for belting from floor to floor, the removal of the old steam-boilers and the gas-jets. These have given place to newer and safer methods.



HANDLING MOLTEN METAL IN THE FOUNDRY: "BACKING-UP" THE ELECTROS.

Molten metal is contained in the pan to the right. The operator is pouring metal into the trays further on, "backing-up" the electrotype shells obtained from the baths.

celerity. Speed and perfection are, indeed, the twin aims, and it may be said, perhaps, without undue boasting, that both are usually attained.

At its very best the temperature of such a department must be exceedingly hot from the constant presence of liquid metal, dusty from the use of blacklead in moulding, and noisy from the scream and buzz of saws; but it is a model of its class, alike in equipment and in the splendid facilities for light and ventilation.



MAKING WAX DUPLICATES OF THE PAGES OF BLOCKS AND TYPE, AT WORK IN THE FOUNDRY. The large Hoe press to the left is used to obtain a facsimile of the type forme in wax after blackleading it. A type forme is shown on the first table; and there are wax duplicates on that to the left.



TRIMMING THE PLATES AND FINISHING THEM: FINAL OPERATIONS IN THE FOUNDRY. This photograph shows work at the saw-bench, plates being trimmed to size. Metal is cut with the same facility as wood. In the background, at the benches, are men "finishing."

• THE PRINTING OF THE PAPERS •

AND now to follow the electro-types or plates to the machine-rooms. Undoubtedly unique, even amongst progressive houses of to-day, the actual printing departments or press-rooms possess a most notable equipment of genuinely new and literally up-to-date machines. It is most difficult to realise when standing in one of these rooms that only recently older machines were installed, and that a perfect tangle of shafting and belting occupied the air-space above the

sheets on a trolley ready for removal to the binding department. There is an entire absence of shafting and belting overhead, and thus no dust or grease flies about, the workers are safe from the risk always accompanying belts and shafting, and the gain in light and general access is beyond praise. The room itself possesses a concrete floor, a lofty roof with steel girders, and plenty of window light, whilst a run-way with block and tackle enables stacks of paper to be removed from one press to another or in and out of the building with ease.

The Cottrell presses themselves are of a new type—the first to be seen in this country. They are of the rotary class, but, instead of feeding from the reel, take cut sheets, and are thus adapted for the best papers. They have a speed of some 3000 sheets per hour, and are automatic from start to finish. One recent adjunct is the addition of a device for cleaning rollers and plate-cylinder in a few minutes. Before this apparatus was used rollers needed to be removed from the press singly, cleaned and returned, with the apparent disadvantages to these delicate

I.L.N. or sixteen pages of the *Sketch* being worked off at one impression—that is, in one sheet. The electrical driving is under splendid control. The machines have several speeds, and can thus be started slowly and gradually put up to the desired speed. The Kohler control, by means of push-buttons, ensures safety, for the running may be checked from any side of the press. To the newspaper-proprietor and the manager of a printing-works no music could exceed in sweetness and tone the roll and rhythm of this battery of presses in operation.

Yet another machine-room utilises Cottrell machines of another class. These are two two-revolution machines, equipped with "Slogger" automatic feeders, and turning out splendid work at a rate of some 1500 sheets per hour. Besides these, the room includes four of the deservedly popular British machines, the "Percelex" two-feeder flat-bed cylinder-presses, and a little "flyer" in the shape of a Wharfedale press by the same makers—Dawsons, of Otley. A sight to arrest attention is the great array of rollers stacked along the wall, ready for use on demand. This room is usually occupied with the printing of the "art" section of *The Illustrated London News*, also special insets and the cover.

One more press-room completes the tale. This houses three machines specially made for three-colour work. This is a modern process, whereby practically any picture in colours may be reproduced in three printings. That department undertakes the exacting work of this class.

It may be noted, by the way, that the system of electric driving in *The Illustrated London News* machine-rooms was installed by Electromotors, Ltd., Manchester, who specialise in the complete electrification of works; while the Kohler System of Printing-Press Control, which, as we have already remarked, is used to operate the new presses, is by Messrs. Kohler Brothers, of Ludgate Hill, E.C. This system is very widely in use, many great newspaper establishments installing it. Ink is, of course, of primary importance in the machine-room, and in this connection it may be said that a famous class of

ink for the best illustrated work is represented in the Doublet and Ullmanine inks of the Sigmund Ullman Company, whose British agents are Borne and Co., 165, Wool Exchange, Basinghall Street, E.C.

POWER FOR THE MACHINES: PART OF THE ELECTRIC SWITCHBOARD.

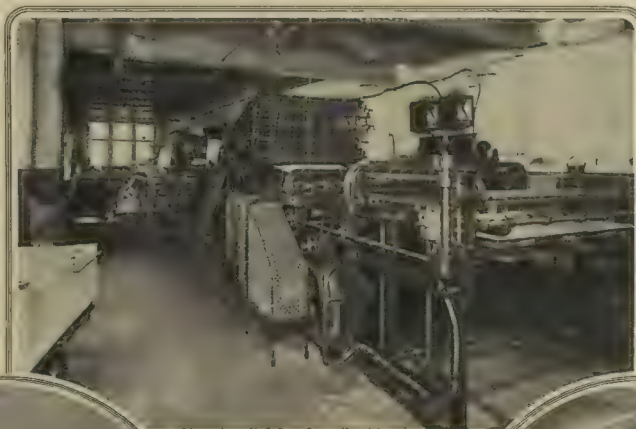
POWER FOR THE MACHINES: PART OF THE ELECTRIC SWITCHBOARD.

presses. When one's eyes rest appreciatively upon the spick-and-span, automatically operated and motor-driven presses, remembrance of the older conditions arouses something like a shudder. And do not forget that the former equipment was also very good in its way, and was typical of many of the best London offices.

Before putting the plates from the foundry on to the printing-machines these demand "make ready" of a skilled character, and a chalk "overlay," calculated to give the varying pressure to the forme so as to impart the desired light and shade, solidity and uniformity, is prepared. A separate department undertakes this, and by the process referred to, with an equipment of "Lightning" proof-presses, overlays are made and plates proofed, all preparatory to the actual work on the big printing-machines. This department is, of course, very largely responsible for the beautiful effects obtained in the pictorial reproductions included with each issue of *The Illustrated London News* and *Sketch*.

There are several machine-rooms: one of these is occupied by a battery of flat-bed cylinder-machines, a class of press popular for good-class typography. The series of presses includes Century, Miehle (American machines), and a Payne (an Otley make) two-colour machine. These are regularly occupied with covers for the *Sketch*, and with insets and colour-work, and in themselves form a machine department to be coveted by most printing houses.

The largest of the machine-rooms is one housing no less than six of the famous new Cottrell rotary sheet-feed presses. These completely fill the extensive space provided, and form a battery of machines of intense interest. Each is equipped with a Cross automatic feeder, is driven by a separate motor, and with an automatic delivery which mechanically places



ONE OF THE MOST UP-TO-DATE PRINTING-MACHINES IN THE WORLD: A SIDE AND DELIVERY-END VIEW OF A COTTRELL PRESS.

This prints sheets as shown in the piles on the floor to the left. Note should be made of the electrical neutralizer on the press to the left. This is used to counteract the electricity apt to collect on the paper in movement, and to cause sheets to adhere together.

parts of the machine's anatomy.

The mechanical feeder renders high speed possible at any time of day or night. The human feeder could neither give the speed nor the accuracy always ensured by the machine. Each of the Cottrells takes a 64-in. by 44-in. sheet,

but by simple adjustment can as readily take smaller sizes. This great size has enabled the *I.L.N.* and *Sketch* to be worked in a much shorter time than was possible under the older conditions, eight pages of the



ENSURING THE BEST RESULTS: PROOFING.

Here all formes are tested before going on the machines. What are termed "overlays" are made here. These assist the printer to bring out the light and shade of a picture and materially aid in securing uniformity of results.



FOR COMPARISON WITH THE NEW: SOME OF THE OLDER MACHINES.

These are interesting as compared with the newer presses. They still give useful service on occasion, and form a reserve of very considerable value in times of exceptional stress, when every machine must come into use.



IN A SECTION OF ONE OF THE MACHINE-ROOMS: COTTRELL TWO-REVOLUTION PRESSES.

The photograph shows the Slogger automatic pile feeders attached to the machines.



IN A SECTION OF ONE OF THE MACHINE-ROOMS: TWO-REVOLUTION PRESSES.

The photograph also shows how the motor-driving does away with overhead shafting and belting.

THE PRINTING OF "THE ILLUSTRATED LONDON

DRAWN BY

NEWS": MACHINING AN EDITION OF THE PAPER.

S. BEGG.



THE LATEST TYPE OF MACHINES DESIGNED FOR THE BEST WORK, GREAT SPEED, AND RELIABILITY:

It may be said without fear of contradiction that "The Illustrated London News" is equipped splendidly with machines designed to produce the high-class printing it demands—machines which are the most up-to-date of their kind. The work in the great machine-rooms may be described as follows: When the plates of the pages have been finished in the Foundry they are sent down to the printing-machines. The machine-manager then places them on the spirally grooved plate-cylinder and fastens them with catches. After this the plates are gauged so that when the sheet is printed the margins may be equal for folding. Making-ready is the next process. This is done by building up any uneven places in the plate with thin paper, in order to get a perfectly level impression for printing. The paper for printing is delivered into the main room straight from vans in the street, being hauled in on a jib crane. Throughout the room is a runway on which the bales of paper, weighing upwards of two tons, can be easily moved along and placed beside the printing-machines. The paper is then taken by the assistant and placed on the automatic feeder. After this, the process is entirely automatic, the feeder delivering the paper to the printing-press sheet by sheet. Should there be

ROTARY PRINTING-PRESSES TURNING OUT AN ISSUE OF "THE ILLUSTRATED LONDON NEWS."

a torn sheet or a sheet not fed into the machine, the whole action is stopped automatically by an electrical cut-out. The matter is adjusted by the machine-manager, and the press is started again by simply pressing a button. The sheets, after printing, are delivered (as illustrated in the extreme right-hand corner) on to a loading-board, which is fitted with castors. The machine continues running until about 7000 sheets are printed. This load is then run off the machine on to a truck, which is taken direct to the folding-room, and run on to the folding-machines without handling; this means a great saving of labour and prevents all smearing. As the machines continue printing hour after hour, a certain amount of dust or fluff comes off the paper and works back on to the inking-rollers. When these rollers become too dirty for producing clean work, the press is stopped, the automatic feeder thrown out of gear by a clutch, and the automatic roller-washer thrown into gear. Paraffin is poured on to the rollers, and the press is started running; in five minutes the rollers have run themselves perfectly clean and are again ready for inking. On Page vii will be found an article dealing more fully with the subject.

THE BINDING & FINISHING OF THE PAPERS.

COMPOSITION, plate-making, printing—all are processes leading up to the production of the printed sheet. Having obtained this, the equally important work of the Warehouse Department begins. This labours under a particular little worry of its own peculiar binding departments, in that it is invariably operated at top pressure, the office term of "rush" well describing the state of affairs in the warehouse rooms when in full swing. This is explained by the necessity for keeping forms open until the latest moment, in order to utilise late news, and as it is the final operation between production and the actual publishing, the binding is done at a rate and with an expedition which will scarcely be believed. Here, as elsewhere, organisation is everything. The system adopted endeavours to avoid anything like overlapping, makes use of mechanical aids wherever possible, and, as a result, does its share of the work most capably and with a speed which is a veritable joy to the anxious publisher.

The Warehouse Department occupies a series of rooms leading into one another and equipped with machinery superseding the former rows and rows of tables for hand work. The sheets of paper come from the printing department by means of a lift, and, still on stout trolleys, go direct to the folding-machines.

FOLDING AND INSETTING.

The Illustrated London News is folded in a sheet of sixteen pages, the *Sketch* in thirty-two pages, and the whole of the operation of folding is done by mechanical means. A row of folders, each equipped with an automatic feeding apparatus, not only eliminates the necessity for the hand factor, but regularly and systematically deals with the great piles of sheets coming to be thus folded.

From the delivery-table of the folders the finished sheets or sections move, by means of



CARRYING STORES OF PAPER BY MEANS OF A TRAVELLING CRANE DIRECT FROM THE VAN TO ANY PART OF THE MACHINE-ROOMS.

RESERVES OF PAPER.

Extra editions and special occasions throw additional work on this department and strain it to the utmost; but

white paper warehouse upstairs. Quite a large number of machines are in regular use—folders, trimmers, and guillotines—these being driven by electric motors and so arranged that any single group or the whole together may be set in operation. En route to other rooms, warehouses are passed with great stores of white paper—that is, paper so far unused, and ready for taking to the machines. Great stacks of paper in large size sheets are seen here. Even the packing and clearing-out of waste-paper possesses a department of its own, cleverly systematised.

ITEMS OF INTEREST.

The stitching-machines in the binding department are mounted on a platform which covers a belt drive, whilst other small machines, as in the foundry, are also driven in groups. In all cases the control of the motors is semi-automatic, an ingenious switch device protecting motors from restarting until required.

An electric lift runs from the press-rooms to the bindery. This carries one and a half tons, and possesses automatic control from push buttons at the different floors. Another lift is operated by a separate motor and belting. Thus, obviously, a great deal of time is saved.

The well-known house of John Dickinson and Co., Ltd., Old Bailey, E.C., is usually represented in the paper used by *The Illustrated London News* and *Sketch*. This connection between the two firms has existed in the most amicable fashion for many years.

As indicated elsewhere in this number, paper of the special class used for illustration work generally is regularly supplied to *The Illustrated London News* and *Sketch* by A. M. Peebles and Son, Ltd., 151, Queen Victoria Street, E.C., whose connection with these journals has also been long.

The lighting throughout the whole building is carried out most thoroughly. There are some



TRIMMING THE PAPERS' EDGES.

Here a great number of the copies of *The Illustrated London News* and *Sketch* are received in the wire-stitching machines are being trimmed for cut straight on three sides, and then a kind in which to be sent to the publishing department. The "guillotine" shown in the top and bottom in one operation, the side in a second.



ANOTHER STAGE IN THE PREPARATION OF THE ILLUSTRATED NEWSPAPER; FOLDING-MACHINES IN OPERATION.

These ingenious machines, whose business it is to fold the large sheets of the papers, are both automatically and hand-fed. They were supplied by Messrs. James Salmon and Son.



THE REVOLVING TABLE AT WHICH THE SHEETS ARE INSET ONE INTO THE OTHER, IN THE WAREHOUSE.

The large circular inseting-table revolves slowly with its piles of folded sheets. The women seated around take up the various sections as they come in turn and put these together. Men carry the sets away to be wire-stitched.

a travelling belt, on to a bench alongside a great circular table around which sit women "insetting" sheets into one another as the mechanically moved table gradually rotates past them with its piles of sections.

WIRE-STITCHING.

The various sections forming one copy of *The Illustrated London News* or *Sketch* are thus brought together here, with cover and insets complete. These sets then go to the wire-stitching department, where a row of rapid-running machines, each with two operators, swiftly and definitely wire-stabs each copy, thus completing the book form of the paper.

TRIMMING THE EDGES.

From the wire-stitchers the copies are stacked up in perfectly straight piles on the tables of great cutting-machines—a three-sided trimmer, for instance, possessing an enormous capacity for work—and here the sides are cut and trimmed, and the copy is ready for the reader's hands. The piles of completed newspapers are next tied up, and are sent down a chute to the packing department, which opens into Milford Lane: here publishing to the wholesale newsagents is done. The general publishing office is at 172, Strand.



WHERE RETAILERS OBTAIN THEIR COPIES OF "THE ILLUSTRATED LONDON NEWS" AND "SKETCH" AND THE GENERAL DISTRIBUTION OF THE PAPERS IS ORGANISED; THE PUBLISHING OFFICE AT 172, STRAND.

this is promptly met by drawing upon reserves, another battery of folders being arranged in a former section made practical and of day-and-night usefulness.

400 lights in all, with flexible pendants and enamelled metal shades, Tantalum lamps being employed. In the Composing Department a series of 100 c.p. Siemens "Onewatt" filament lamps provide a general illumination, supplemented by 50 c.p. Tantalum lamps with dark enamelled shades over the frames and the stones in the centre of the room. The whole installation is not only entirely successful in providing safe and reliable means of lighting and heating, but in comparison with the cost of the older methods is wonderfully economical. Thus the establishment not only gains materially in regard to cleanliness and light, but the electrical power for the machines does away with noisy and dangerous shafting and belting. In actual cost, too, there is a gain, this being but one-third of the former heavy charge.

As further demonstrating the self-contained nature of the premises, there is now a separate engineer's and carpenter's shop, constantly at work on repairs, for so great a place is necessarily subject to wear-and-tear, and it is a convenience to make such damage good without needing to send out for the carpenter or the breakdown gang. Machine-tools are used by the engineers, and in all respects is this

THE REPRODUCTION OF COLOURED PICTURES BY LITHOGRAPHY.



WHERE NUMEROUS "ILLUSTRATED LONDON NEWS" COLOURED PLATES HAVE BEEN LITHOGRAPHED: A CORNER OF THE WORKS OF MESSRS. GILBERT WHITEHEAD AND CO., AT NEW ELTHAM.

Messrs. Gilbert Whitehead and Co., the famous lithographers, have their works at New Eltham, in Kent, far away from the smoke and grime of London, for fresh air and clear light are of great importance for obtaining the best results.

IN the early Victorian days, crude wood-cuts and cheap and gaudy, but woefully inartistic, colour prints from foreign workshops were the only pictures to be seen on the walls of the less wealthy Englishman's home. The works of the great masters, old and new, were unattainable except to the rich. Thanks, however, to lithographers, the masters have been brought from their hiding-places into our midst as living presences, and in countless homes of industrial and professional England will be found, in places of honour on the walls of every room, beautiful and perfect reproductions in colour of the greatest works of the greatest men in the world of art—from Rembrandt to Rossetti, and from Rubens to Millais. The demand has always been for "more," and in the course of its history *The Illustrated London News* has played no mean part in meeting that demand and in fostering the national love for the highest—and nothing less. For years past we have from time to time given away, not only with our Christmas Numbers, but also with the ordinary weekly issues, many magnificent coloured plates printed by lithography, and true always to the lofty standard in beauty, quality, fidelity and finish for which the well-known firm of Messrs. Gilbert Whitehead and Co. are so justly renowned.

Amongst many other noted pictures reproduced for us by them, we may specially mention such favourites as "Absence Makes the Heart Grow Fonder" and "His Ship in Sight," by Marcus Stone, R.A., and "Off Duty," by Julius M. Price, all of which, framed, are fit to grace the walls of the most exacting connoisseur; and also, amongst the smaller supplements, Frank Haviland's series of famous actresses, and the grand reproductions, published from time to time during the past twelve months, of world-renowned paintings by Old Masters, such as "Nature," "The Beautiful Miss Croker," and "The Countess Grosvenor," by Sir Thomas Lawrence; and "Lavinia, Countess Spencer," by Sir Joshua Reynolds.

The works wherein Messrs. Gilbert Whitehead and Co. produce this beautiful printing—and no finer lithographic printing is done in this country—are situated in the fresh air and amidst the green fields at New Eltham, in Kent, away from the smoke and dirt of London, in the clear bright light that is so essential to the highest quality of work.

It is impossible in so small a space as is here available to describe in detail the many processes which are required for the production of a coloured print by lithography, but the plate presented with this Number will enable the general reader to see for himself how the various colours, printed one on the other, blend into each other to make up the finished picture. From beginning to end, the production of every picture entails the

greatest possible attention and conscientious care. A perfect, flawless reproduction of the original is the first and last essential to Messrs. Whitehead; and point by point every step, in what is invariably a long, delicate, and intricate process, is carefully followed, since the slightest variation in any one colour nullifies the whole picture.

though "Cherry Ripe," after the same artist, runs it very close as a perfect reproduction, worthy at any time of a place beside the original.

Many of the beautiful Art Supplements issued with the *Illustrated Sporting and Dramatic News*, the *Sketch*, and other well-known publications, have been the work of Messrs. Gilbert Whitehead and Co.

When the artist and the advertiser joined forces years ago, lithography was necessary to make a perfect alliance, and Messrs. Whitehead, taking up the work with their characteristic thoroughness, speedily showed what marvellous possibilities lay before the allies. Opinions may differ as to the righteousness of the alliance between commerce and art, but there can be no doubt that firms like Messrs. Whitehead have done good work for the community in clearing from the advertisers' hoardings the old-fashioned mural monstrosities, and replacing them by superb reproductions of great pictures, such as "Bubbles" and the large "Health and Beauty" posters, for Messrs. Pears; "The Girl at the Spring," for Messrs. Scheppe; and many artistic pictures for such firms as Messrs. Lever Brothers, J. Dewar and Sons, and almost every leading advertiser who realises the greater influence of good work. Indeed, Messrs. Gilbert Whitehead and Co. have so successfully specialised in the highest-class posters that they are continually kept busy by the most enterprising firms in the world.

In this branch, as in all other branches, quality is the keynote from first to last, and the posters of this firm are noted for their beauty, brilliance, and uncommon durability. In conclusion, we should mention the wonderful reproduction, made a few years ago by Messrs. Gilbert Whitehead and Co., for the Rt. Hon. Charles Booth, P.C., of Holman Hunt's great masterpiece, "The Light of the World" (the second and greatly improved picture, which has since been presented to the nation, and hangs in St. Paul's Cathedral). The reproduction is probably the finest piece of lithographic printing which has ever been done in this or any other country.



THE FIRST PLATE MADE FOR "THE ILLUSTRATED LONDON NEWS" BY MESSRS. GILBERT WHITEHEAD AND CO.: A REPRODUCTION OF MR. LUCIEN DAVIS'S PICTURE. "THE DIVISION LOBBY IN THE HOUSE OF COMMONS," IN 1885.

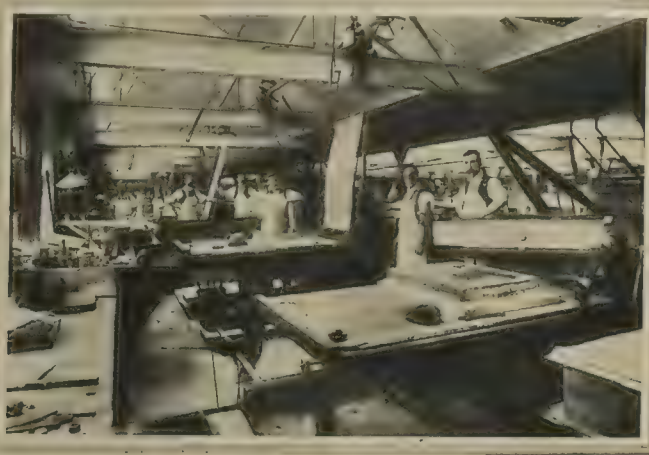
Many well-known political figures can be recognised in this picture, the first lithographed for "The Illustrated London News" by Messrs. Whitehead, and published in our issue of June 27, 1885. In the centre foreground are John Bright and Mr. Gladstone. Lord Kessington, the Government teller, is at the door on the extreme left, which Mr. Chamberlain may be seen about to enter. Just behind Mr. Gladstone's left shoulder is the face of the late Lord James of Hereford, then Sir Henry James. To the extreme right at the back is Parnell.

As an illustration of the perfect accuracy with which pictures are reproduced by this firm, we may mention that a painting by Sir Lawrence Alma-Tadema, R.A., the property of the well-known Bell-Moor collector, Mr. T. J. Barratt, was copied, and the copy shown to a noted art critic, who was asked to point out which was the original. Both being framed alike, he was at first greatly perplexed, but finally he came to the conclusion that the copy was the original! Another proof of this



WHERE MOST ARTISTIC POSTERS ARE PRODUCED: IN THE MACHINE-ROOM AT MESSRS. GILBERT WHITEHEAD AND CO.'S WORKS.

Much of the artistic improvement in the modern poster is due to the lithographic work of Messrs. Gilbert Whitehead and Co. At the back of the photograph may be seen some of the well-known pictures that adorn the London hoardings. Messrs. Whitehead's reproductions of pictures are so accurate that in one case (mentioned on this page) the copy was mistaken for the original.



A STAGE IN THE PROCESS OF LITHOGRAPHIC COLOUR-PRINTING: PROOFING IN THE GALLERY AT MESSRS. WHITEHEAD'S.

To quote the description of colour-lithography given on our Supplement Plate—"As each stone is finished by the artist it is taken over by the prover, who, after etching it with weak acid in a solution of gum arabic, proceeds to roll up the stone with coloured ink . . . and pulls an impression of it on paper. This he submits to the artist."

SETTING ELECTRICITY TO "KILL" ELECTRICITY.

ON something of the principle of "setting a thief to catch a thief," a very real difficulty experienced by printers, paper-makers, and others dealing with paper or cards in movement is happily entirely removed. More particularly in dry weather, whether summer or winter, do the paper-makers and printers experience very serious trouble with electricity generated by the friction set up or pressure exerted in working such paper. The presence of electricity in the paper renders sheets difficult to control: they adhere to each other, and "off-set" results when printing. The sheets "lead" irregularly and "deliver" equally badly, and, in short, the presence of electricity causes unsatisfactory work, waste of time, and waste of paper. Novel and ingenious devices have been adopted to overcome the trouble—gas flames, steam jets, vapour pots, and so on—but few of these are satisfactory and to be depended upon.

Yet the disease eventually called into existence its remedy, and strangely enough electricity is now employed to kill electricity!

What is known as the Chapman Process, employing the Chapman Electric Neutralizer (British Agent, John Robertson, Wardrobe Chambers, Queen Victoria Street, London), completely solves this very awkward problem, and is successfully applied as an aid to printing, to paper-making, and the manufacture of textiles. There is actually something new under the sun in this instance and—quick to seize its advantage—the novel application of electricity is already in regular operation amongst printers and others troubled with electrical worries.

In brief, the process consists in providing an alternating static field for the charged material to pass through whilst in process of manufacture or printing. The charge in the material, whether positive or negative, finds its affinity satisfied in the alternating charge where both kinds are present. Curiously enough, at least to the average layman in matters electrical, under the law of repulsion for like, and attraction for unlike, it makes its own selection and becomes absolutely neutralised. The Chapman method, in fact, utilises a simple law of nature, and experience in thus harnessing natural forces shows it to be the best, the safest, and the most economical means ever suggested for its purpose.

In *The Illustrated London News* printing department, the equipment of the Chapman Electric Neutralizer controls quite a range of machines and is regarded as an actual necessity. The huge and costly presses in operation there must be kept running at top-notch efficiency, and no condition can be tolerated that lessens production or impairs the quality of the work turned out. Remember, too, that skilled operatives should not be subject to conditions which dissipate their energies in contending with obstacles—at least, if science can remove such. Prompt to adopt any means of speeding-up machines, of improving quality of output, and of minimising delays and worries, American paper-makers and printers have become universal users of the Chapman device.

This transformer may be fed from any alternating current supply, or a small alternator is provided, to be utilised as a converter from a direct current supply. The cost is very slight, for only as much current as would be consumed by one 16 candle-power incandescent lamp neutralises the electricity in a dozen or so machines. So elastic is the system adopted that it may be applied to practically any number and class of machines, and to any style of building.

But the Neutralizer is equally valuable in the textile mills. Users find they can work in a lower temperature, one not nearly so humid and certainly more healthy than under the older artificially humid system designed to minimise electrical troubles. One result is that the actual product is stronger, more even, and more elastic, whilst there is decidedly less waste and greater actual production. Furthermore, there is no risk of shock to any employee working on the machines. The size of unit adopted for the generating apparatus is absolutely safe, and even the maximum output from the transformers, if taken through a man's body, is quite harmless.

The Chapman process is veritably a boon and a blessing. Not merely in a pleasingly theoretical sense is this perfectly true, but in a most practical, actual, and tangible fashion.

THE PROPER HEATING OF ROOMS: THE RADIATOR SYSTEM.

EDUCATION in regard to matters of domestic comfort undoubtedly grows apace. Amongst other directions the open fireplace method of heating our houses is gradually losing its hold on the householder just as it did upon the proprietors of factories and those concerned with public buildings many years ago. Visitors to the United States, for example, usually appreciate the system so generally prevalent in hotels and private houses there whereby all rooms and corridors are heated uniformly by a radiator system. On return home the contrast afforded by the open fire method is most striking, and the comparison is not in favour of the latter. The "oh-so-English" open fire is eminently cheerful and comfortable in appearance and dear to one's memories, but to be honest to ourselves we have to admit that it can be shockingly extravagant in cost, cause much needless dust, dirt, and labour, and, after all, be most inadequate as a genuine house-warmer.

Most people confess that they like to see a fire in the room. The mere sight of one seems a good thing on a chilly day. To throw aside sentiment, however, it must be admitted that the wide, open chimney exacts a substantial toll not only upon the coal used, but on the heat itself generated in the fireplace at its base. Even then such a fire only serves to warm one room—the next room and the corridor adjoining may and probably will be as cold as the air out of doors.

When, therefore, a method of practically maintaining the same temperature everywhere is offered one ought to be intensely curious and even more than curious—very deeply interested. It is true that there are various systems of heating houses and factories; but there are crudities and inequalities about some of these methods, and users have never become enamoured of the large, clumsy pipes and other fittings, so that until very recently their adaptation for household use has been regarded as scarcely worth consideration.

But scientific research into the action of heat, and into methods of conveying heat, has changed all this, and there are in existence to-day a number of installations of a perfected system which are successful in the highest degree. These at a low cost heat all the rooms of a house or factory to exactly the same temperature throughout—modified locally if desired—and without any of the dirt and discomfort caused by carrying in coal, removing ashes, lighting fires, and cleaning chimneys.

The system in question makes use of hot water, controlled so cleverly and using such small pipes that it seems to sweep away even the faintest objection in favour of the open fire. The method utilises the well-tried low-pressure arrangement already widely in use, but in such fashion that it is safe, can be handled by a maid or gardener, and is in every way adapted for small as well as for large installations.

A feature of the "Beck" system, as the method in view is known as, is the very rapid circulation of the water in a low-pressure hot-water heating apparatus without any resort to pumps, or other complexities in the shape of circulators, floats, or levers. It employs a simple, ordinary low-pressure hot-water boiler, retaining the simplicity of the low-pressure hot-water apparatus throughout.

The whole of the premises housing *The Illustrated London News* and *Sketch*—editorial, clerical, printing, and publishing departments alike—is equipped with the Beck System (the Atmospheric Steam Heating Company, Ltd., 52, Gray's Inn Road, London, W.C.). One comparatively small boiler suffices for the whole of the very numerous radiators distributed throughout the building. The system proves an ideal one for a printing works, but so sound is it in principle and so elastic in its wide application that it is equally perfect in its adaptability to the private house. A number of such installations have been made. To quote one such, a London dwelling, the fire is attended to by the kitchen-maid, a simple form of boiler is used, and the hall and corridors of the house are maintained at the same temperature as the rooms themselves. *The cost of the coal used for the whole house is only the cost of the coal formerly used for one or two of the fireplaces.* This is a typical case, and the house gains in real comfort, in cleanliness, in health, and in the expense bill by its adoption of a modern system. Surely such a method is well worth looking into!

• MAMMOTH PRINTING MACHINES; & FOUNDRY EQUIPMENT.

NO one better than that ubiquitous individual "The Man in the Street," appreciates the truly wonderful progress made in the mechanical part of newspaper production. That shrewd outsider usually sums up the position of things at its true value, and he is quick to see that his favourite newspaper dishes up and serves the

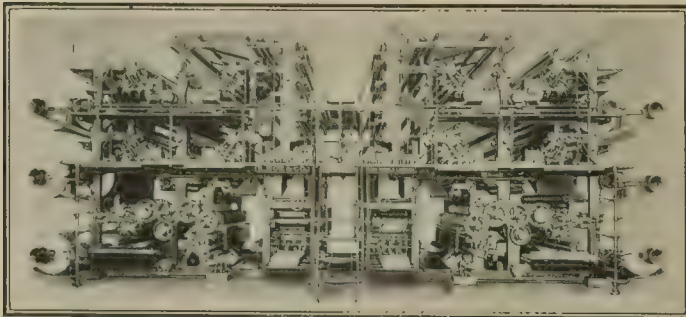
skilled workpeople, until the great fitting-shop was reached. This contained quite a series of machines in process of erection. At one end, and nearly filling the space from floor to roof, was a mammoth press in the shape of a double sextuple for the *Daily Mail* office. This great machine, or rather, series of machines

combined, is some 30 ft. long by 16 ft. high—a veritable giant. Its capacity of a running speed of 4, 6, 8, 10, 12 page papers at 120,000 copies per hour sounds incredible, but is perfectly demonstrated; for the engineers show by accurate revolutions of cylinders, all parts working in unison, the exact speed of operation.

colour cover. Its running speed affords 24,000 per hour of a thirty-two page paper and four-page cover. Specially built for the *Sheffield Weekly Telegraph*, it happily illustrates yet another exacting class of production—the popular weekly.

A near neighbour of this is also a rotary-press, for

liffe and Co., and specially adapted to print the handsomely illustrated trade papers associated with this house. This has a running speed of 6000 per hour of a sixty-four page paper, with splendid inking facilities. But the great works have other departments, those connected with electrotyping and stereotyping machinery, for instance, being of very considerable extent. Among the machines ready for delivery may be mentioned the powerful 32 in. by 36 in. hydraulic moulding-press—for taking a mould in wax from the forme, and giving a pressure of 430 tons. Stereotyping-machines include the pneumatic drying-press and the widely used matrix-rolling press adapted for news illustrations, pumps, and



R. HOE AND CO.'S DOUBLE SEXTUPLE PRESS, ONE OF THE MAMMOTHS AMONGST NEWSPAPER PRINTING MACHINES.

This takes six double-width rolls of paper, each roll about 72 in. wide. It has four folders and as many deliveries; automatically prints both sides of the paper; cuts, folds, and delivers the completed newspaper in four batches.

news to him "mighty quick"—a quickness which is real even to a *blase* mind accustomed to being served well.

Those able to lift the veil and to see something of the inner working of the newspaper find it a mine of interest, but one and all give the palm in point of interest and value to the mighty machines which eat up paper and disgorge it as the finished newspaper, folded and ready for crying on the street. Where such machines are mentioned the name of the Hoe press arises as a matter of course.

In search of some note of interest to our readers on this subject at the immense Hoe works in London, our representative was promptly invited to run through the erecting-shops—where the parts are assembled together and the completed machines tested—and see for himself what is being done at any time. He thus found himself going through all manner of departments—draughtsmen's, casting, general engineering, of an extraordinary extent, and seeing great machine-tools of a size and ingenuity scarcely credible, with swarms of

The printer appreciates how every part of the mechanism is readily accessible and as readily controlled. This press possesses special facilities for late news, the "fudge" devices being cleverly designed. Being a double sextuple it simultaneously uses six great reels of paper, each double-width, and four separate folders are incorporated with it. Think of the output of such a press per week, and remember that it works from the reel, prints, folds, and delivers in batches—all complete! Hard by is another machine in process of erection. This is of another fold, and wire-stitch a



A BATTERY OF R. HOE AND CO.'S PNEUMATIC DRYING-PRESSES.

These have just been installed in the "Daily Telegraph" foundry. Their work is to dry the moulds used in electrotyping and to expedite production thereby. There are also shown two matrix-rolling machines. These make the matrix from the type or slug forme, and ensure uniformity of impression.

machine in process of class, designed to print, and every detail of finishing machine—routers, jig-saw, and drill even—demanded by the up-to-date newspaper plant.

· HIGH GRADE PAPER : HOW IT IS MADE ·



WINDING THE PAPER INTO REELS:
REELERS AT WORK

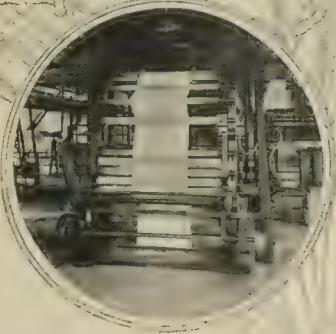
When paper is to be printed from the web or roll it is necessary to trim it to the desired width, then to wind it very tightly under high pressure to the required thickness. The reeling-machine does this, the reels often containing as much as five miles of paper. The reels are then packed for carriage to the printing-office.

In doing this, he in turn becomes more and more exacting in his requirements from paper-makers, from ink-makers, and from engineers. The universal improvement in methods of production is very largely due to the zeal with which "supply" houses co-operate and endeavour to anticipate and fulfil demands. A famous paper-making establishment, that of A. M. Peebles and Son, Ltd., possessing various large mills in Lancashire, has done great service to high-class newspaper and magazine production by constantly maintaining close touch with the most progressive of printers and publishers; and the fact that so much of the paper regularly used in *The Illustrated*

THE growing desire for pictorial news seems to become an imperative demand to-day: readers will have pictures. Thus it comes about that the printer must utilise every aid that science can give in the work of pictorial reproduction.

is to print. These are produced by photographic means from an original subject—a wash drawing, an oil or water-colour, a sketch in crayon, in ink, or in pencil; but most of all from photographs. The engraver utilises the intermediary of a glass screen, ruled so finely as to give anything from 100 or 200 lines to the inch, according to requirements. This device breaks up the whole surface into an infinite number of tiny points, and it is this which allows of the picture on the plate being printed from. The negative is printed by strong electric light on the coated plate, so etched as to remove or lower every part of the surface except the actual picture, and the plate or block is ready for mounting on a wood or metal base. Then the printer's turn comes. It is here that the special papers in question take their part. They offer a hard, unyielding, smooth, and

the ball" by removing the greater part of the dust and dirt contained in the grass. It is then transferred to the Esparto Boiler, and cooked with caustic liquor to disintegrate the fibres and free them from resinous and glutinous matter.



COVERING THE PAPER WITH CLAY AND GLUE OR CASEIN:
THE COATING-MACHINE

Here paper is given a fine coating of a substance chiefly compounded of clay mixed with casein—the product of skimmed milk, or glue. On leaving the coating-machine it is dried by fans, and passed through a long chamber heated by steam to a high temperature.

washed, it is ready to be conveyed to the bleaching stage; thereafter it is run over a Presse Pate machine and over strainers still further to rid the material of any dirt which it may contain. It is now ready for the "beaters," which are fitted with a very large roll and plates. Various materials are here added, such as the sizing ingredients, colouring matter, etc.; and the fibres are carefully drawn out according to the quality of the sheet of paper required.

This all-important stage satisfactorily completed, the stuff resulting is now ready for the actual paper-making



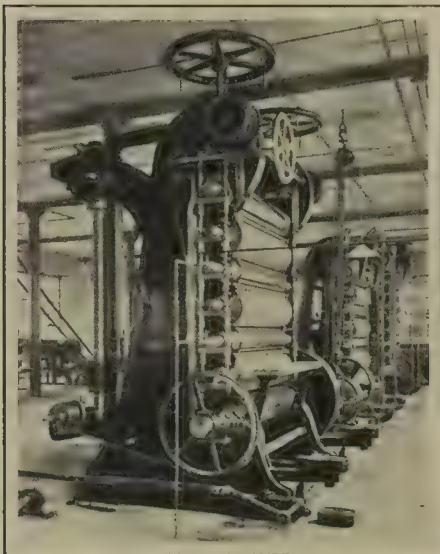
IN A CHAMBER 300 FEET LONG, HEATED TO A HIGH TEMPERATURE, ART PAPER BEING DRIED.

The view shows great festoons of "coated" paper being dried in a heated chamber. See the reference to the coating-machine.

uniform surface to the picture plate, or "block," as it is known; and when coated with ink on the machine take from the tiny points forming the surface of the block sufficient ink to make the picture.

Long experience has led the house to evolve its present perfected means of production, and although the whole process is a string of highly complicated methods, involving a deep study of chemistry and of mechanics, it may perhaps be summed up briefly for our purpose.

Chief amongst raw materials for the manufacture of paper is wood pulp—representing the actual tree ground down into a pulp. Rags are largely used for better-grade papers, and solely for some papers, but esparto grass is a constant material for magazine papers. Imported from Spain and the North of Africa, it undergoes a systematic cleaning and breaking up at the mills. To take this operation as the starting-point, it is seen that a Willow or dusting-machine "opens



GIVING A SMOOTH AND GLOSSY FINISH TO SPECIAL PAPERS: ART AND CHROMO PAPER CALENDERS.

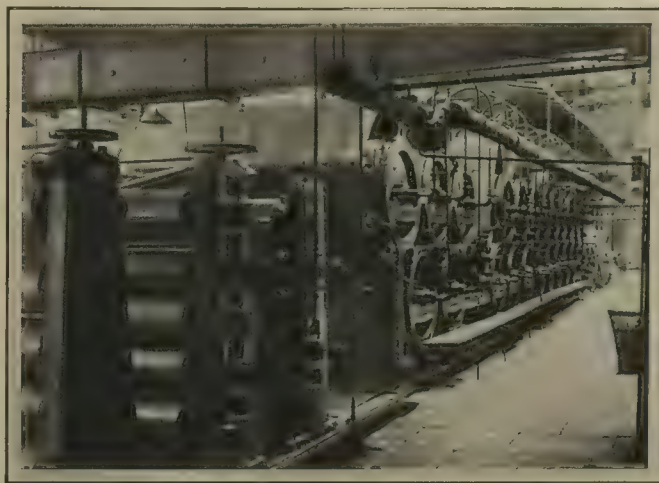
This presents a row of machines used to give the final smooth and glossy finish to the special grades of paper required for printing illustrations, including pictures in colours.

London News is made by this house, and has been supplied to the *I.L.N.* without a break for forty-five years, is in itself a most emphatic endorsement of the progressive policy marking the firm's business.

And what of the special printing-paper such publications demand?

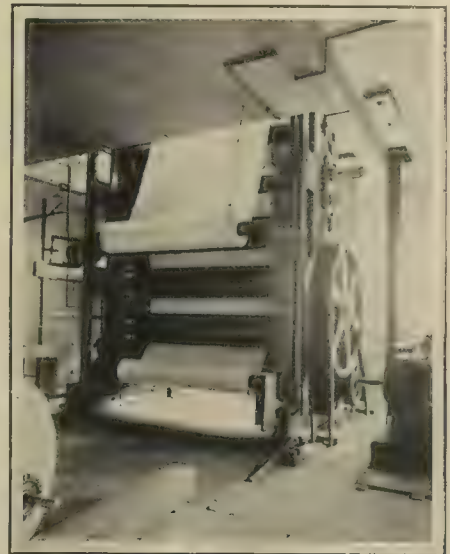
A little examination of the *I.L.N.* paper—pressure between finger and thumb, a superficial damping of the surface, and then a comparison between it and the paper utilised by your favourite morning journal—will show unmistakably that these are as distinct as the proverbial chalk and cheese. The former paper is thicker and stouter, purer and whiter, uniform in colour and in general appearance, and, above all, possesses a dazzling white enamel-like coating. The "news" paper, although perfectly suited to its purpose, is positively crude, rough, and unfinished in comparison. The Peebles Paper Mills can supply many kinds of paper and promptly fill a surprising range of demands, but they are, perhaps, most to the fore with the "surfaced" papers under consideration.

And why should this "coated" class of paper be demanded? Here is the reason. Magazine illustrations are available by many methods, but the most generally used process provides for the printer copper or zinc plates bearing in their own form the picture or pictures he



WHERE THE MATERIAL TAKES SHAPE AS ACTUAL PAPER: A PAPER-MAKING MACHINE.

So large is the series of machines forming the paper-making "machine" that our view only presents about one-third of its extent. Here the material is taking shape as actual paper, being dried and smoothed by passage round and between the cylinders shown.



GIVING THE PAPER A SMOOTH, HIGHLY FINISHED SURFACE: A SUPER CALENDER, WITH ELECTRICAL DRIVE

Paper from the paper-making machine is run through this range of polished cylinders. The effect is to impart a smooth and highly finished surface.

machine. The material passes through a series of strainers, and goes on to the first part of the wire, and is carried forward with a shaking motion. After passing through the couch rolls, the material first begins to assume a paper-like appearance, and deckle straps run on each side of the wire to determine the width. At the end of the wire the dandy roll presses lightly on the surface, and produces any desired water-marks. As the paper leaves the wire, it is conveyed by means of an endless woollen felt to the press rolls. From the press rolls it is carried forward to the drying-cylinders, then to the calender rolls, where a high machine-finish is given. This is practically the end of the stage for ordinary printing-paper.

The paper for illustrations, however, goes a step further. It is coated with a special preparation, including satin white, *blanc fixe*, etc., and sized with either glue or casein. The coated paper then passes in a long series of graceful festoons through steam-heated rooms to dry. It is then reeled and calendered, and now possesses a highly polished, coated surface.

The firm of Peebles is noteworthy as dealing direct with the consumer—literally from the paper-mill to the printing-machine.

FAMOUS MAKERS OF INKS

WHEREVER printing-ink is utilised, it is safe to say that the name of Lorilleux is known and esteemed. The house of Ch. Lorilleux and Co. was founded in 1818, at 16, Rue Suger, Paris, the head office and warehouse of the firm being on the same site to-day. At

a time when printers made up their own inks, it was not easy to convince them of the advantage of purchasing inks ready made; but by consistently selling only really reliable supplies, this prejudice was worn away gradually, and to-day the house has four great factories of its own, and many important branches and dépôts throughout the world. The important London office is at Maclean's Buildings, New Street Square, E.C.

The history of the business is one of continual growth and of constant extension of premises, the growth necessitating branches being supplied with grinding-mills and other facilities for actually making inks. Such a position and so high a reputation are not easily earned; but so strongly established is it that the name of Lorilleux is veritably a household word in the printing industry.

To particularise a little. Of late years photo-mechanical reproduction has ousted the wood-cut for the purpose of book and newspaper illustration. The printer is called upon to print from shallow-engraved metal plates, and the problem set the ink-maker in connection therewith was to afford an intense and solid colour with the minimum quantity in use. This demand is admirably filled by the firm in question. But to go from blacks to colours generally, the

same conditions apply to the enormous range of colours and shades available. Any colour or tone can be readily matched, and the user is certain of obtaining an ink he can employ with ease and with effect. The latter-day colour-printing processes demand not only the essential conditions marking the inks mentioned, but colours which shall harmonise and work together when superimposed, and this proved a real problem. It is solved very completely and readily, however, by the Lorilleux inks. These are very widely

in use for the now popular three-colour process.

Of course these new and exacting conditions caused costly experiments and trials to be necessary, but the famous French house never requires urging to make such, its policy being rather to lead and

anticipate than to be in any sense driven. All this naturally creates a reputation to be much envied. But in other directions, notably in the lithographic inks for picture-poster work and for chromo-lithography generally, does the Lorilleux reputation hold good. The poster work, for instance, offers its own troubles and trials, but in this direction the results are equally happy and successful. There are other and special lines, such as, for instance, the colours for the beautiful tin-plate printing, for which inks providing the best effects, in spite of immersion in water; or subjection to great heat, are always available.

Inks and colours for embossing, for blocking book and catalogue covers, for gold work, for photogravure, and for kindred artistic reproductions, all come within the scope of the house.

One of the secrets of this great firm's success is the constant research going on by the staff of chemists at the Puteaux laboratories. This is not only a safeguard, but a warranty of genuine workmanship and of the continuance of a forward policy.

The Lorilleux inks are largely drawn upon for regular use in the production of *The Illustrated London News and Sketch*—in itself an endorsement of a most practical nature.



PART OF ONE OF MESSRS. LORILLEUX'S GRINDING-ROOMS, SHOWING A FEW OF THE 300 MILLS USED BY THIS FIRM.

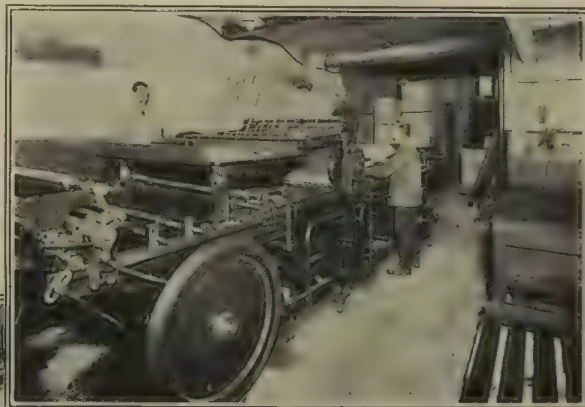
The photograph shows a part of one of the ink-making departments of Messrs. Ch. Lorilleux and Co., Paris. The pigment or colour, and the varnish, which when compounded, make up printing-ink, are ground together between closely fitting granite or chilled-steel rollers. By frequently grinding and re-grinding the close compounding necessary for printing purposes is ensured.

FINE ART AND COLOUR MACHINES

PROMINENT among the British-made printing-machines in use at *The Illustrated London News* office are representatives of the latter-day Wharfedale flat-bed cylinder-machines, made by William Dawson and Sons, Ltd., Otley. Reliable in operation, readily manipulated, speedy, and producing a high grade of work, they have proved eminently suitable for pictorial newspaper production and magazine work. The most complete of the series is known as the "Perceler." This is of the Wharfedale class, but differs in many respects from the everyday machine known under that name. Take as "the latest word" the fine two-feeder Perceler fine-art machine. This will produce 1250 copies per hour from each board, giving 2500 from the two boards of a quad-demy size. This, too, is easily accomplished, and in no direction causes vibration, shock, or other trouble which may result in undesirable wear and affect the quality of the output. The accuracy of register possible on the Perceler is a particular recommendation to the colour-printer. In the two-feeder machine two feed-boards are provided, inclining to the centre, over the cylinder, the grippers on which receive the sheets first from one board and then from the other. The sheets are delivered at the end opposite to their feeding-table, and are piled up under the feed-board. Delivery is made with the printed side up, and nothing comes in contact with this side from cylinder to delivery. But novelty in build and ingenuity of design are not all. The linking arrangements are

notably good. Four large rollers cover a full-size forme at each side of the cylinder, and each set includes two reciprocating riders, a connecting rider, and two storage rollers, with geared distributors. As an extra, a reciprocating ink-drum can be supplied. Each board possesses a feed-check, so that each side may be operated separately from the other. In regard to size, the machine will print from quad demy to quad

suitable for the general printing-establishment as well as for fine magazine work.



FOR TWO-COLOUR WORK. A FLAT-BED MACHINE OF THE WHARFEDALE CLASS.

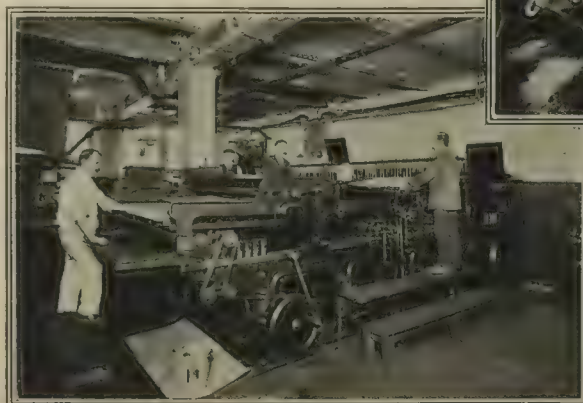
This is a flat-bed cylinder machine of the Wharfedale class for two-colour printing. It requires hand-feeding, as seen to the right, and delivers sheets by the arrangement of sticks or flyers, seen midway on the board facing the man to the left.

crown, or from royal to quad demy, or may be taken for one fixed size and operated as a two-feeder. An obvious advantage is that, by simply checking one feed, it becomes a single-feed machine,

The two-feeder Perceler has found many users, simply because in practical operation it fulfils the claim of the makers.

Of similar interest to those requiring colour-work, the two-colour machine is worth a reference here. It may be adapted to suit everyday printing or high-class work, according to the user's requirements. This machine possesses an ingenious device, in the shape of a loose cylinder wheel, whereby the table is prevented from taking on the second revolution if it should fail to take the first. This is an obvious safeguard.

Apart from these special machines the Dawson single-colour Wharfedale continues to hold its high position in the favour of users. This also can be fitted for ordinary commercial work or for the finest half-tone printing, according to requirements.



FOR FINE-ART WORK. A PERCELER TWO-FEEDER PRESS.

This represents a Dawson (Otley) machine, hand-fed, but delivering automatically, and designed for best-class work at a high rate of speed.

and thus exceedingly handy for the general jobbing-office. It is this adaptability which so materially enlarges the scope of the two-feeder and at once renders it quite

A REMARKABLE PRINTING PRESS : THE COTTRELL SHEET-FEED ROTARY.

TO realise something of the really extraordinary pitch of excellence attained by printing machinery of to-day, look into one of the machine-rooms of *The Illustrated London News*.

Here is an installation of no less than six of the very latest type of machines designed for the best work, for great speed, and for the absolute reliability so dear to the heart of the newspaper proprietor. The type of press referred to is the Cottrell Sheet-Feed Rotary (C. B. Cottrell, Sons, and Co., New York, U.S.A.), this forming a complete change in printing-press methods. The machine is automatic in its operation, and, by the addition of an automatic feeder, not only prints and delivers mechanically, but is automatically fed, taking a sheet 64 by 44 in., and running at the rate of 3000 per hour on first-class work. Being a rotary press, there are plate and impression cylinders, the former being spirally grooved, taking any size plate placed in any position, and perfectly fastened and adjusted; steel cylinder-bearers are provided on both cylinders. The inking apparatus is mounted on a frame which may be moved away to allow of access to the cylinders. The pressmen simply move this away to get inside the machine for make-ready purposes. The inking is supplied from the ductor on to a large steel drum, and from this to ten four-inch composition rollers; four rollers roll the forme twice for each impression. No speed is too great for this device, perfect inking being ensured. After leaving the

cylinders, sheets are delivered printed side up or down, as required. No handling of the sheet is needed, the horizontal delivery piling up the sheets on to a truck, and thus ready for removal without any trouble due to handling. Besides being highly ingenious, rapid-running, and effective from beginning to end, the machine action includes an absolutely rigid impression. This applies to all classes of work and to any size forme up to full-sheet. Furthermore, because the two cylinders run accurately together in proper contact, register is absolutely ensured.

However fast it is operated, the press runs smoothly, without jerk or strain, and thus avoids the wear-and-tear of plates so apt to occur in rotary machines. A feature of the Cottrell, in fact, is the wonderful degree of similarity exhibited between the first and last sheets run off.

The new Sheet-Feed Rotaries possess the good features of two-revolution presses with double their speed. Their capacity greatly reduces the cost of presswork by getting increased output in considerably less time.

In regard to the installation at the *I.L.N.* offices it says much for the estimation in which this firm's machines are held that the press in question should have been selected out of all the available machines offered by British, American, and Continental makers. Great is the endorsement, for not only one machine but six are installed. The first proved so satisfactory that the order for five others followed quickly. An interesting feature about the series is that each machine is an exact duplicate of the others. Thus all parts are interchangeable, and in case

of accident and emergency this may prove of material service.

THE CROSS AUTOMATIC FEEDER.

To take full advantage of the facilities for output offered by such a

press, an automatic feeder must be utilised, for hand-feeding cannot possibly maintain high speeds for long. The Cottrell machines in question are fitted with the Cross Feeder, a wonderfully ingenious mechanical device, unfailingly delivering sheet by sheet to exactly the same position, and, unlike the human feeder, never tiring. Thus, the feeding of a machine so equipped is reliable at all times, and not only reliable, but so fast that every advantage is taken of the press and its adaptation for rapidly turning out satisfactory work. There is no need to stop the machine to put on a fresh load of paper, for additional supplies may be put in position whilst the press is running.

The Cross Feeder, too, is readily adapted to suit any size of sheet within its range, the variation in adjustment being made in a very short time. When making ready and hand-feeding, the Cross Feeder may be run back and put out of operation *pro tem*. This further illustrates its versatility.

In brief, the Cottrell Sheet-Feed Rotary, fitted with a Cross Automatic Paper Feeder, is an ideal combination for reliable output.

THE FIRST ROTARY PRESS—INVENTED BY THOMAS NELSON, EDINBURGH, 1854.

THE FIRST ROTARY PRESS—INVENTED BY THOMAS NELSON, EDINBURGH, 1854.



DESIGNED TO PRODUCE THE BEST WORK AT GREAT SPEED: COTTRELL PRESSES, SHOWING THE CROSS AUTOMATIC FEEDING DEVICE.
Sheets can be seen leaving the Cross automatic-feeder, going through the machine, and the final delivery in a pile ready for removal to a floor-truck.

THE "I.L.N." ELECTROTYPING DEPARTMENT.

THIS has been entirely reorganised and new plant installed by Messrs. W. Canning and Co., electro-platers' engineers, of Birmingham and London. The plant now consists of one six-volt 2000-ampere motor-generator, one three-volt 100-ampere motor-generator, and one three-volt 600-ampere dynamo, belt-driven from overhead shaft, all of which supply electric current to four lead-lined vats, measuring 6 ft. by 3 ft. by 3 ft., and containing the following solutions—i.e., three sulphate copper, and one Canning's "Niferro" solution, for their new process of depositing nickel-steel direct on to wax. We believe this arrangement (although not altogether new in America and France) is the first plant of any magnitude to be successfully worked on a commercial basis in England.

Each vat is controlled by an iron-clad resistance-board with ammeter and voltmeter. The generating plant is so arranged that the current to all the vats can be supplied from the 2000-ampere motor-generator or by means of change-over switches which can be put in circuit with each vat. Current can be taken from either the 800-ampere motor-generator or the 600-ampere dynamo, or the three machines can be run together and so subdivided between the four vats according to the load of work in each vat.

The system of perfect agitation has been installed, one of Canning's patent pneumatic agitators being fitted to each vat and supplied by one compressor, each vat being under perfect control by means of screw-down valves.

The foregoing may be regarded as an unintentionally technical description of the equipment of this veritably modern installation, suited to the electrotyping and to the printer. Let us now endeavour to put into everyday language something of the method of producing electrotype plates for the printer. This, read in connection with the earlier reference to the appliances mentioned, should be of no little interest.

The type-forme received from the composing department for duplication is taken to the moulding department of the electrotyping-room. It is first warmed by placing upon a steam-table, and then an impression of it is taken in a wax composition spread upon a metal slab. The surface of the type and of the wax are alike coated with blacklead, preventing the wax from adhering to the type. Extra wax is placed in blank places in the forme. A hot iron is passed over the edges to melt the wax, destroy the blacklead coating, and to confine the deposit of copper to the face.

After washing with water under pressure, the mould is then taken to one of the baths, previously charged with a solution of sulphate of copper, water, and sulphuric acid, or, as the case may be, into a bath containing "Niferro" solution for nickel steel. A current from the adjacent dynamo then sets in operation an electrical action separating copper or nickel steel particles from sheets of copper or nickel steel suspended in the bath, and deposits these upon the face of the mould, thus exactly reproducing every detail of the face. Allowed to remain in the bath about one and a half hours, the copper or "Niferro" deposit is ready, and the mould is taken from the bath, the "shell" being removed from the wax by pouring boiling water upon it. It is then ready for backing.

To form the back of the shell it is placed face downwards in a shallow pan. It is then covered with tinfoil and heated, in order that the molten lead shall adhere to the copper. The molten lead is filled in, the whole cooled, and the copper-faced lead plate resulting is planed to a standard thickness. Various machines are then utilised for cutting, for trimming to shape, for sawing up the pages, and so on. Modern electrotyping is truly a highly technical and even scientific industry.

The extraordinary pressure of extra editions and special numbers during the recent Coronation period formed the finest possible test of the newly arranged plant. On the testimony of the Manager, this more than fulfilled all calls made upon it. Not only was every facility afforded in regard to speed of output, but the quality of the plates in no way suffered, the Canning system being thus triumphantly vindicated.

UP-TO-DATE FOLDING MACHINES.

READERS will naturally realise that by no means the least important department in the production of weekly papers is that for folding the printed sheets before they are issued to the public, and for this purpose it is not an easy matter to obtain machinery which will give expedition and at the same time produce work direct from the printing-machines without smearing. For publications such as *The Illustrated London News* and *Sketch*—full, as they are, of heavy half-tone blocks—the selection of folding-machines is a most important affair, and one of the best-known specialists in the trade was called in as advisor. The firm's ideas as to what it was desired to accomplish were given to him, and he was left to produce machines which would satisfy the requirements. The result is now to be seen every week in the papers which the firm issue to the public, and it may be said without undue boastfulness that *The Illustrated London News* and *Sketch* have now the finest existing battery of folding-machines for this particular class of work. Four of these machines are to be seen working in the Illustration published in this number, and each of them produces 3000 folded sheets of sixteen pages of *The Illustrated London News* per hour, and 3000 thirty-two pages of the *Sketch* per hour, folded direct from the rotary printing-machines, without the slightest smear and without any creasing at the head of the page. The methods adopted for accomplishing this are unique in their way, and are the result of great ingenuity on the part of the manufacturers. A pile of sheets to be folded is placed alongside each machine, 4 ft. or 5 ft. high, on an automatically rising table, and they are then fed into the machine either by hand or mechanical means, being carried up to a back gauge, and automatically side-lay adjusted. In the case of the thirty-two page *Sketch*, the sheets are perforated at the head during their traverse through the machines, which eliminates all chance of creasing at the head when delivered from the machines. At the back of this row of folding-machines is placed a travelling band, on which the folded sheets are conveyed to the collating-tables, where they are finished off and wire-stitched in the centre. These machines have been produced by the well-known firm of Messrs. James Salmon and Son, Woodley, near Stockport, who for years have made a study and speciality of this class of machinery, and their productions are now to be found in most of the leading printing offices throughout the civilised world, even to Japan, China, Australia, and South America. Their principle of construction is in some respects unique, as the sheets in the process of being folded are carried through the machine without any twisting or turning in their traverse, as is the case in most of the other machines of that class now before the trade. They successfully supply a long-felt want for producing publications similar to the *I.L.N.* and the *Sketch*, as formerly these publications could not be issued so rapidly owing to the risk of smearing. Messrs. Salmon and Son make a speciality of machinery for all kinds of folding, including a very neatly designed machine for folding two eight-page sheets at a time printed from a single set of blocks, which is capable of producing these at a running speed of six thousand sheets per hour, the same machine being capable of folding two four-page sheets made up in the same manner at the same speed.

As far as we know this is the first occasion on which it has been possible for printers to carry by means of trolleys huge stacks of printed matter four feet high from the delivery apparatus on printing-machines and place them alongside the folding machinery without employing hand-labour, and consequently minimising to the greatest extent the risk of smearing in transit from one machine to the other—stacks of paper which in the class of work concerned weigh upwards of two tons each.

It is a noteworthy fact that since this folding-machinery has been installed Messrs. Salmon and Son have been inundated with inquiries from all parts by firms anxious to lay down a similar class of machinery, and they are to be congratulated on their enterprise in successfully accomplishing what so many other manufacturers have failed to do, as it must be evident to the ordinary observer that it is the outcome of much thought and considerable experiment.

· CONCERNING INKS OF ALL KINDS & COLOURS ·

THE researches of modern chemistry, practically applied to the manufacture of printing inks, have brought about many changes in this important direction of supply for the printer. The last few years, for instance, have seen permanency of colour

perfected to a wonderful degree, very many colours being now rendered permanent which were formerly regarded as hopelessly otherwise. There is also an enormous increase in the number and variety of inks, culminating in the wonderful double-tone colours.

A firm identified with a genuinely progressive policy in this direction, that of Slater and Palmer, Wine Office Court, Fleet Street, E.C., and Marshgate Mills, Stratford, has for long supplied inks for *The Illustrated London News* and *Sketch*, and something concerning its operations may be suitably included with this issue.

First, let us look into the method of manufacture, the Slater and Palmer works being favourably adapted for furnishing such information. This is because they are self-contained, making everything from the raw materials, and also on account of the extended nature of their products—news inks, jobbing and book-work inks, half-tone and coloured inks, varnishes, inks for offset work, for photogravure, for colotype, and other specialities—all being made at this factory.

The manufacture of printing-ink may be said to consist in grinding a pigment into a varnish, the latter carrying the former on to the printing-machine and eventually on to the paper. Thus the factory in question, in distinct departments, (1) produces varnishes, (2) manufactures pigments, (3) grinds pigments into varnish.

Varnishes are of the resin and linseed class chiefly, but include such as are devoted to ensuring the consistency and drying of inks. Resin is distilled in great iron stills, the process being repeated over and over again, gradually purifying the resin oil from the acid which would not only prove undesirable to type and blocks, but would fill the printing-office with an aroma calculated to attract the attention of the sanitary inspector. The resin oils are suited for the cheaper grades of inks.

Linseed varnishes are dealt with in great pans which are subjected to a very high temperature. This drives off the volatile elements, and eventually a thick viscous oil is obtained. This oil is stored and is matured before use. The dryers are obtained by adding oxidising agents to linseed oil.

The pigment department deals with an enormous field, for blacks in themselves are very numerous, the chemical



MESSRS. SLATER AND PALMER'S CENTRAL OFFICES AND WAREHOUSES, IN WINE OFFICE COURT, FLEET STREET.

colours and the "lakes" seeming already endless in number. The blacks are



WHERE INK OF ALL KINDS AND COLOURS IS MADE: THE MARSHGATE MILLS OF MESSRS. SLATER AND PALMER AT STRATFORD.

produced from hydro-carbons, resulting in carbon blacks, lamp blacks, oil blacks, and so on according to their origin. The pigments are seen in course of

preparation by chemical means, and in vats and tubs. Compounding and mixing go on ceaselessly. Vermilions, chrome yellows, bronze blues, Prussian and Chinese blues, for instance, are amongst the chemical compounds, whilst cyanides and umbers are typical of earths and ores chemically treated. The popular "lakes," the so-called anilines, are chiefly derived from coal-tar, and the ink-maker speaks eloquently of the importance of this source of colour, and the progress made in increasing their strength and degree of permanency.

Having obtained the constituents of the printing-ink, it remains to combine these suitably. This is done in a range of machines including "mixers" and "mills," the latter crushing the combined varnish and pigments over and over again between closely set granite or chilled rollers. All this takes time and skill, large and costly plant, ingenious methods, and continual supervision by the chemist. The laboratory is ceaselessly at work, testing materials and ever seeking for improved means and better results.

At the Slater and Palmer warehouse and offices in Wine Office Court, Fleet Street, stocks of these inks, dry colours, and varnishes are seen in the familiar iron kegs and tins. A glance at the labels in the packing-room shows that not only do the firm's products reach British printers everywhere, but that a very large business is done abroad. Agencies in the Colonies, in South America, and in Japan, for instance, cover the ground thoroughly, whilst a separate plant is in operation in Canada.

It is interesting to note also how inks are adapted for suitable use in all climates and in almost every possible class of printing surface, from wood pulps to vellum, the new double-tone inks, which give the effect of two colours at one operation, being much to the fore.

Matching colours is a feature of the warehouse. Here the printer can bring a colour and have such matched quickly, whilst a very complete printing-machine installation, including cylinder and platens, permits of suitable proofing and testing. In charge of an expert, this department is a valuable aid to the firm's customers. Mills are also in use on these premises for special orders. A private telephone connects with the works at Stratford, and every facility for quick delivery is adopted.

The manufacturing departments are under the personal supervision of the principal, Mr. Frank Palmer, whose grandfather was the founder of the business.

READ BY THE WORLD: "THE ILLUSTRATED LONDON NEWS" OVERSEAS.

DRAWN BY A. FORESTIER.



1. IN INDIA.

2. IN CHINA.

3. IN CANADA.

4. IN AUSTRALIA.

5. IN CENTRAL AFRICA.

6. IN ALGIERS.

7. IN THE WEST INDIES.

In the course of its long life "The Illustrated London News" has become "as familiar as household words," not only in this country of its birth, but in every part of the world: and not only among English-speaking peoples, but also among those who, though they may not be able to understand the letterpress, can read the universal language of pictures. There is no corner of the inhabited globe, in fact, to which "The Illustrated London News" does not penetrate. If it is not actually on sale, say, at the North Pole, or on the top of

Mount Everest, it reaches places almost equally remote in the hands of travellers and those frontiersmen of the Empire to whom it is sent out by friends at home. To the exile in far-away lands a copy of "The Illustrated London News" is welcome. Innumerable copies are passed on from one reader to another, both at home and abroad, and in this way the paper attains, of course, a vast secondary circulation in addition to the initial weekly output, which, it need scarcely be said, is in itself great.

• A MOST INTERESTING MACHINE •

NOTHING is more fascinating to the intelligent mind than the sight of modern machinery in motion. Without brains, it seems to be animated by the highest intelligence; without hands and arms, it seems to be endowed with capacities of the utmost precision, and performs its intricate and varied evolutions as if it had acquired skill by long years of training and practice.

To nothing do these considerations apply with greater force than to the Miehle printing-press, which forms the subject of our illustration. It is the last word in the machinery designed by the ingenuity of man for the dissemination and propagation of man's thoughts through the medium of the printed word. Its sphere of utility must not, however, be confounded with the familiar rotary press, for which it is necessary to curve the pages.

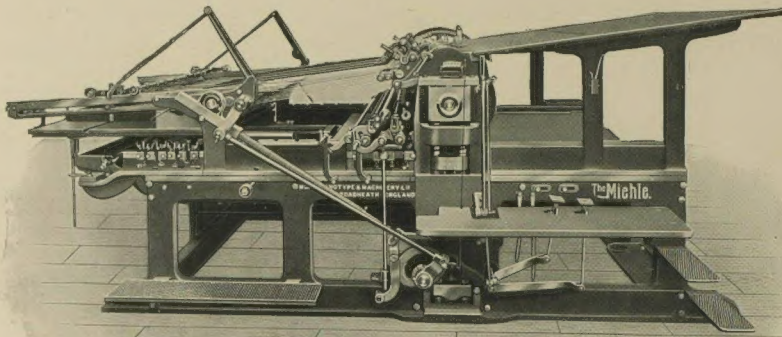
The Miehle press is intended for printing on the flat, and is, therefore, adapted for the production of high-class book work, magazine work, and the modern artistic "job work" which, perhaps, calls forth the highest manifestations of the printer's skill, as well as for colour-printing, the development of which has made such rapid strides and reached such a high degree of artistic finish during the last few years. Indeed, it may safely be said, without fear of contradiction, that it is largely to the perfection of the Miehle, which stands to-day at the head of all presses of its character, that this artistic development and consummate perfection of colour-work are due.

Apart altogether from the evenness with which the colour is distributed and the complete refinement and delicacy of tone which can be obtained by a simple yet wonderfully precise method of adapting the quantity and flow of ink to the most exacting requirements, the Miehle press enables the printing of each colour to be so accurately adjusted in its

relation to every other colour that there is no overlapping. The result is that there is no blurring of tone or coarsening of tint, and the paper leaves the press presenting, practically, the appearance of a water-colour drawing fresh from the artist's hand. This elaborateness of effect is made possible by the use of what is commonly known as the three or four colour process, by which all the shades in the spectrum, from the deepest to the daintiest, can be obtained.

thousands of subjects similarly reproduced by the three-colour process, have been printed on the Miehle press with such microscopic precision in the delicate registering of the colours that, though made by machinery, they are practically as perfect as if they had been done by the hand of the artist.

Miehle machines are sometimes connected tandem-fashion, forming an equipment of two, three, or four machines, and nothing



A MACHINE THAT IS MUCH USED FOR THREE-COLOUR WORK AND OTHER PRINTING: THE MIEHLE TWO-REVOLUTION PRESS.

The Miehle is the very latest type of flat-bed cylinder two-revolution printing-machine. It is exceptionally speedy, and produces the finest class of book, catalogue, and magazine work. Reliable in register, and with excellent inking facilities, it is much used for three-colour printing. It was on the Miehle press, as mentioned in the article on this page, that three-colour reproductions were made of Turner's "Fighting Téméraire" and Lord Leighton's "Psyche at the Bath," of such beauty and accuracy as barely to be distinguished from original paintings. By the three-colour or four-colour process, all shades in the spectrum, from the deepest to the most delicate, can be obtained on the Miehle machine.

Everyone knows Turner's picture, "The Fighting Téméraire," with its wonderful sun sinking like a ball of blood and casting a lurid glow over the superhanging clouds, just as everyone is familiar with Lord Leighton's popular "Psyche at the Bath," with its delicate warm tints of rosy flesh against the pillars of cool, white marble. Both these pictures, to mention but two of

manufacturers of the famous Linotype composing machine, which produces a line of type in a single operation. To go through the firm's factory at Broadheath, Altrincham, Cheshire, a few miles from Manchester, is to receive a liberal education in the simplicity of seemingly complicated machinery, and to acquire a new respect for the marvellous power of which the human brain is capable.

FEEDING THE MACHINES AUTOMATICALLY •

FOR many years past have inventors sought to make the printing-machine independent of the hand-feeder, and, as a result, numerous mechanical appliances were offered in constant succession. These went through the usual troubles natural to extreme youth; and if machines were born, they also died with unfailing regularity. But all this tended to build up most valuable experience, and there have gradually evolved various mechanical feeding-devices which must be regarded by the most sceptical as fulfilling claims and doing their work thoroughly. In other words, the machine-feeder has "arrived."

In making this statement, one has in view the constantly extending use of the "Slogger" feeder. This not inaptnly named appliance does indeed "slog" away most consistently, and delivers the sheets regularly and evenly in a manner impossible to the human feeder, who, however careful, is but a human being after all, with limitations of his own.

As shown by the accompanying illustration of the Slogger in operation on a cylinder machine, this requires but little additional space; yet the machine thus equipped is rendered entirely mechanical in operation. The pile of paper seen on the table is fed from the top. Separation of sheets is accelerated by a blast of air generated by the aid of a fan, and such that the electricity in the paper is eliminated. While the force of the air-blast is capable of lifting a sheet of pulp-board, it can be so regulated that it will also pick up a quad-crown sheet of 36-lb. super-calendered paper.

A large quantity of sheets can be put on the pile-board at one time—up to twenty reams—and these may be of varying substances in sequence, and yet all will be carried through perfectly. The system of "lay" includes a range of conducting bosses which hold sheets in check, and are so adjusted that in the event of spaces or

margins being cut close the bosses may run across the printed surface without fear of smudge or slur. The front mark is in electrical contact, and renders the lay absolutely accurate, the finest three-colour work being thus produced at high speeds. The paper pile is brought up against an oscillating wind-trough, and,

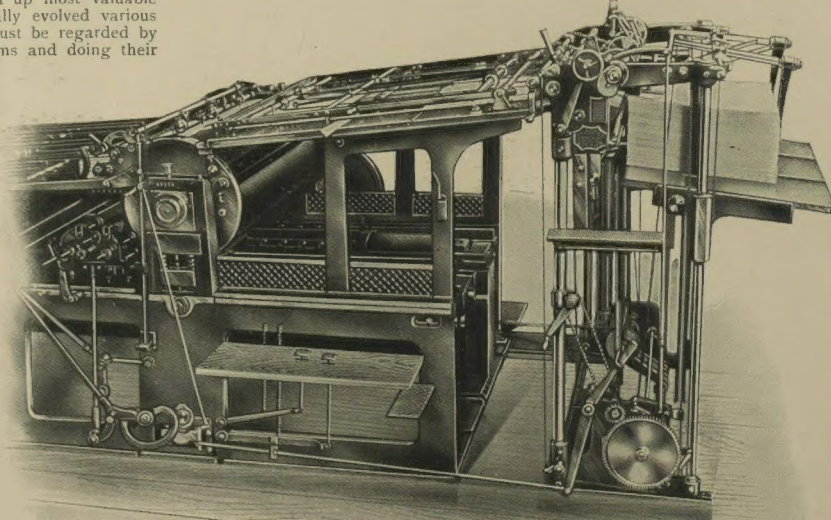
runs upon a bed of tapes to the front lay, and one inch from the side-lay. This side-lay is of an original and most ingenious kind. It does not grip and run out, but runs out to meet the sheet, secures it, and pulls it back to dead lay: immediately on finding the lay the sheet becomes released without any possible chance of buckling or cocking, leaving the centre of the sheet dead-flat on the board—an essential for fine work and for dead register.

In the event of a sheet being cornered or damaged, contacts come into operation from the front lays, and the machine is automatically tripped and stopped. This prevents waste, double-rolling, and a "miss" on the cylinder.

As will be inferred, every detail of the Slogger has been perfected. The appliance is now in regular operation on a very large number of machines. What is more, it is so adaptable that it is made to suit the requirements of different classes of machines. The makers merely require to know the space available and the design of the machine to which the feeder is to be attached, and they can supply a Slogger to do the work. The number of "repeat" orders received for the feeder is perhaps the most practical of all endorsements as to its value and the appreciation in which it is held.

To sum up, the Slogger affords a gain of from 40 per cent. to 60 per cent. in speed as compared with hand-feeding; does not in the slightest interfere with access to the machine; can be handled by the average pressman after a very short tuition; can feed any class or weight of paper; feeds with uniform accuracy, and is being used for the finest colour-work.

The makers are The Slogger Automatic Feeder Co., Ltd., 27, Fetter Lane, London.

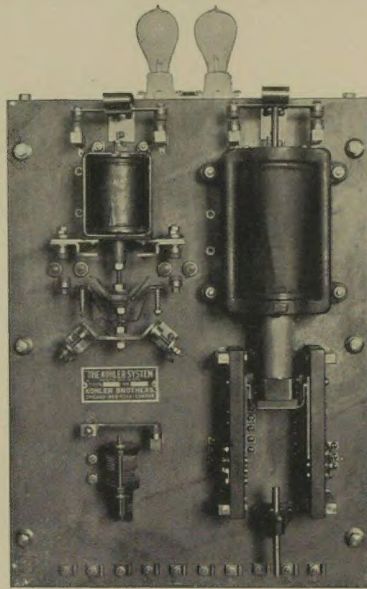


RUNNING THE PAPER THROUGH THE MACHINES: THE SLOGGER AUTOMATIC FEEDER ATTACHED TO A MACHINE.

The illustration shows the pile of paper from which sheets are being taken one by one from the top. The pile-table gradually moves upwards as sheets are taken from it.

on rising, the sheets separate some fifty at a time, the top-sheet receiving actual separation. Whilst thus floating momentarily a pair of mechanical rubber-coated strokers operate, catch the sheet, and put it between a pair of receiving bosses. The sheet then

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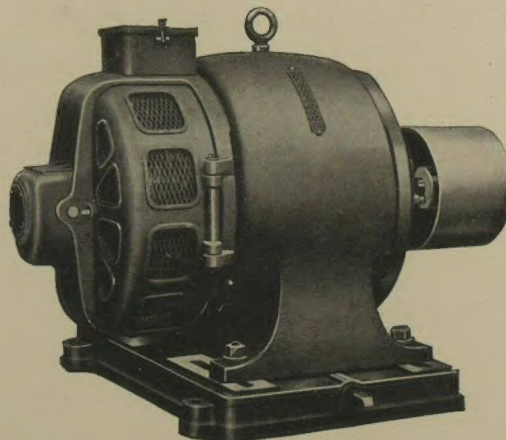
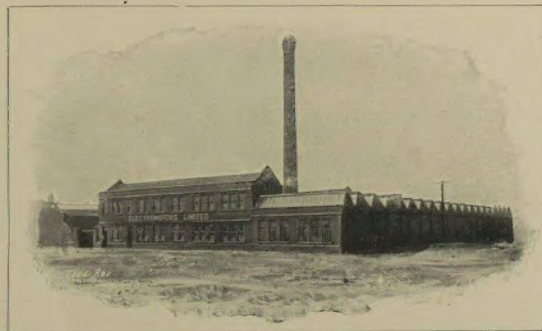
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